

**AGRICULTURAL DRAINAGE CONTRIBUTION TO WATER QUALITY IN THE
GRASSLAND AREA OF WESTERN MERCED COUNTY, CALIFORNIA**

**California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Sacramento, California**

October 1988

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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AGRICULTURAL DRAINAGE CONTRIBUTION TO WATER QUALITY IN THE GRASSLAND AREA OF WESTERN MERCED COUNTY, CALIFORNIA

EXECUTIVE SUMMARY AND RECOMMENDATIONS

SUMMARY

Between May 1985 and March 1988, Regional Board staff conducted a water quality monitoring program to evaluate the effects of subsurface agricultural drainage on the water quality of the drains in the Grassland Area of western Merced County. The purpose of this monitoring program was to compile an ongoing database for selected inorganic constituents found in the agricultural drains discharging to and flowing through the Grassland Area. This database will be used in the development and evaluation of future agricultural drainage reduction programs in the San Joaquin River Basin.

Agricultural lands east, west, and south of the Grassland Area discharge subsurface agricultural drainage water (tile drainage) and surface runoff (irrigation tailwater) to the Grassland Area. This drainage often contains high concentrations of salts, selenium, and other trace elements. This regional drainage flows north through the Grassland Area where it is carried by a network of canals which can divert water in a number of possible ways before it reaches Mud or Salt Sloughs and ultimately the San Joaquin River. A water quality monitoring network was established to ensure measurement of inflows to the Grassland Area, internal flows within the Grassland, and outflows to the San Joaquin River.

Water quality varied widely with the highest concentrations found at the inflow monitoring stations near the southern boundary of the study area. This inflow water is generally a blend of subsurface tile drainage and surface runoff (tailwater) or operational spills from irrigation canals. Four of these inflow points carry a substantial portion of subsurface drainage water. The highest concentrations at these sites likely reflect a greater proportion of tile drainage in the flow and not necessarily the quality of subsurface drainage being discharged at the tile drainage sumps. The sites inflowing from the south and southeast carry the highest concentrations of salts, boron, and selenium. Other inflows contain little selenium, however elevated levels of salt and boron are present. For example, the median values for selenium at the four major inflow points ranged from 47 - 75 µg/L while other inflow points showed selenium values ranging from 1.1 - 9.5 µg/L. For boron however, the four drains carrying the high selenium water showed median boron values ranging from 3.4 - 6.0 mg/L while the other inflow drains that have low selenium values showed median boron values ranging from 0.6 - 7.4 mg/L.

Concentration at the internal flow and outflow monitoring stations were comparable to each other and were substantially lower than the southern inflows. The water quality reflects the amount of mixing and dilution that takes place as drainage water moves through the Grassland Area. The flows are strongly regulated by an extensive system of man-made structures and trends in water quality are difficult to identify.

The two main outflows, Mud Slough (North) and Salt Slough were monitored during the study. These sites represent water quality of the blended drainage flowing from the Grassland Area to the San Joaquin River. The quality of both sloughs varied widely depending upon which slough was carrying the greatest portion of subsurface tile drainage water. Median concentrations for the two sloughs were similar although a wide range of variability was detected. For example, Salt Slough selenium concentrations ranged from 1 to 32 µg/L with a median of 9.5 µg/L. Mud Slough showed a similar variability with a median selenium value of 8.0 µg/L.

RECOMMENDATIONS

1. In cooperation with other agencies and dischargers, continue water quality monitoring at the inflow points to the Grassland Area in order to expand the database needed to evaluate the effectiveness of the drainage reduction programs being developed for the Western San Joaquin Valley;
2. Reduce or eliminate the internal flow stations within the Grassland Area as operation and management play a major role in their water quality;
3. In cooperation with other agencies ensure continued water quality and flow monitoring at the two main outflow stations (Mud Slough (North) and Salt Slough) to the San Joaquin River;
4. Continuous flow monitoring equipment should be installed on the four main inflow drains to the South Grassland Area which are not presently gauged;
5. A special study should be conducted to determine the presence of hexavalent chromium. Total recoverable chromium concentrations were elevated in this study. However, water quality guidelines and criteria identify hexavalent chromium as the only species of chromium to be a threat to beneficial uses.

INTRODUCTION

The Agricultural Unit of the Central Valley Regional Water Quality Control Board (Regional Board) initiated a water quality monitoring program in May of 1985 to evaluate the effects of subsurface agricultural drainage on the water quality of the drains in the Grassland Area in western Merced County. The study area is located west of the San Joaquin River between Newman and Oro Loma, California (Fig. 1). The purpose of this monitoring program was to compile an on-going database for selected inorganic constituents found in the agricultural drains discharging to and flowing through the Grassland Area. This database will be used in the development and evaluation of an agricultural drainage reduction program in the San Joaquin River Basin. This report contains laboratory results and a brief summary of the water quality analysis for samples collected between May 1985 and March 1988.

STUDY AREA

The Grassland Area is comprised of the Northern and Southern Divisions of the Grassland Water District and the farmlands adjacent to the District (Fig. 1). Land in this area is primarily used for agriculture and seasonal wetlands.

Agricultural lands east, west, and south of the Grassland Area discharge subsurface agricultural drainage water (tile drainage) and surface runoff (irrigation tailwater) to the Grassland Area. This drainage often contains high concentrations of salts, selenium, and other trace elements. This regional drainage flows north through the Grassland Area where it is carried by a network of canals which can divert water in a number of possible ways before it reaches Mud or Salt Sloughs and ultimately the San Joaquin River.

There were 32 stations in the Grassland monitoring program. For the purpose of this report they have been divided into three categories: inflows, internal flows within the Grassland, and outflows. Inflow monitoring stations were located on drains that discharge into the Grassland area and are mainly located at the southern end of the study area. Monitoring stations on the internal flow canals were located on drains within the Grassland Area that carry or could carry subsurface tile drainage as it passes through the area before discharging to the San Joaquin River. Outflow monitoring stations were located where drains or natural waterways flow out of the Grassland Area. A list of the monitoring stations is shown in Table 1. There are 13 inflow, 12 internal flow, and 7 outflow monitoring stations. Table 1 also identifies the map index number for each site as shown on the location map in Figure 2.

METHODS

The Regional Board monitoring program for the Grassland Area began in May 1985. The frequency of sample collection varied, but generally grab samples were collected on a monthly basis to be analyzed for total recoverable selenium, boron, chloride, sulfate, total alkalinity, and electrical conductivity (EC). Selected inflow and outflow monitoring sites were also sampled for total recoverable

Table 1. Water Quality Monitoring Sites in the Grassland Area

| Map Index | RWCB Site I.D. | Site Name | Site Type |
|-----------|----------------|---------------------------------------|---------------|
| I-1 | MER556 | Firebaugh @ Russell Avenue | Inflow |
| I-2 | MER501 | Panoche Drain | Inflow |
| I-3 | MER552 | Mercy Springs Drain | Inflow |
| I-4 | MER506 | Agatha Drain | Inflow |
| I-5 | MER507 | Helm Canal | Inflow |
| I-6 | MER504 | Hamburg Drain | Inflow |
| I-7 | MER505 | Camp 13 Slough | Inflow |
| I-8 | MER502 | Charleston Drain | Inflow |
| I-9 | MER555 | Almond Drive Drain | Inflow |
| I-10 | MER509 | Rice Drain | Inflow |
| I-11 | MER521 | Boundary Drain | Inflow |
| I-12 | MER528 | Salt Slough Ditch @ Hereford Road | Inflow |
| I-13 | MER513 | Garzas Creek @ Hunt Road | Inflow |
| T-1 | MER510 | CCID Main @ Russell Avenue | Internal Flow |
| T-2 | MER511 | CCID Main @ Almond Drive | Internal Flow |
| T-3 | MER512 | CCID Main @ Gun Club Road | Internal Flow |
| T-4 | MER540 | Santa Fe Canal @ Hwy 152 | Internal Flow |
| T-5 | MER519 | Santa Fe Canal @ Henry Miller Rd. | Internal Flow |
| T-6 | MER517 | Santa Fe Canal @ Gun Club Rd. | Internal Flow |
| T-7 | MER527 | San Luis Canal @ Hwy 152 | Internal Flow |
| T-8 | MER514 | Los Banos Creek @ Gun Club Rd. | Internal Flow |
| T-9 | MER518 | Eagle Ditch | Internal Flow |
| T-10 | MER516 | Mud Slough (North) @ Gun Club Rd. | Internal Flow |
| T-11 | MER515 | Fremont Canal @ Gun Club Rd. | Internal Flow |
| T-12 | MER553 | Gustine Sewage Treatment Plant Ditch | Internal Flow |
| O-1 | MER 551 | Mud Slough (N) @ Newman Gun Club | Outflow |
| O-2 | MER541 | Mud Slough (N) @ Hwy 140 | Outflow |
| O-3 | MER554 | Los Banos Creek @ Hwy 140 | Outflow |
| O-4 | MER531 | Salt Slough @ Lander Avenue | Outflow |
| O-5 | MER530 | Salt Slough @ Wolfsen Road | Outflow |
| O-6 | MER543 | City Ditch | Outflow |
| O-7 | MER548 | Santa Fe Canal - Mud Slough Diversion | Outflow |

copper, chromium, nickel, lead, zinc, mercury, and molybdenum. Water temperature, pH, EC, and sample time were recorded in the field for each site. All samples were collected in polyethylene bottles with separate samples collected for minerals, selenium, and trace elements. The selenium and trace element sample bottles were washed and acid rinsed in the laboratory prior to use. All sample bottles were rinsed three times with the water to be sampled prior to sample collection. Selenium and trace element samples were preserved by lowering the pH to less than 2 using ultra-pure nitric acid fixation techniques. All samples were kept on ice until preservation or submittal to the laboratory.

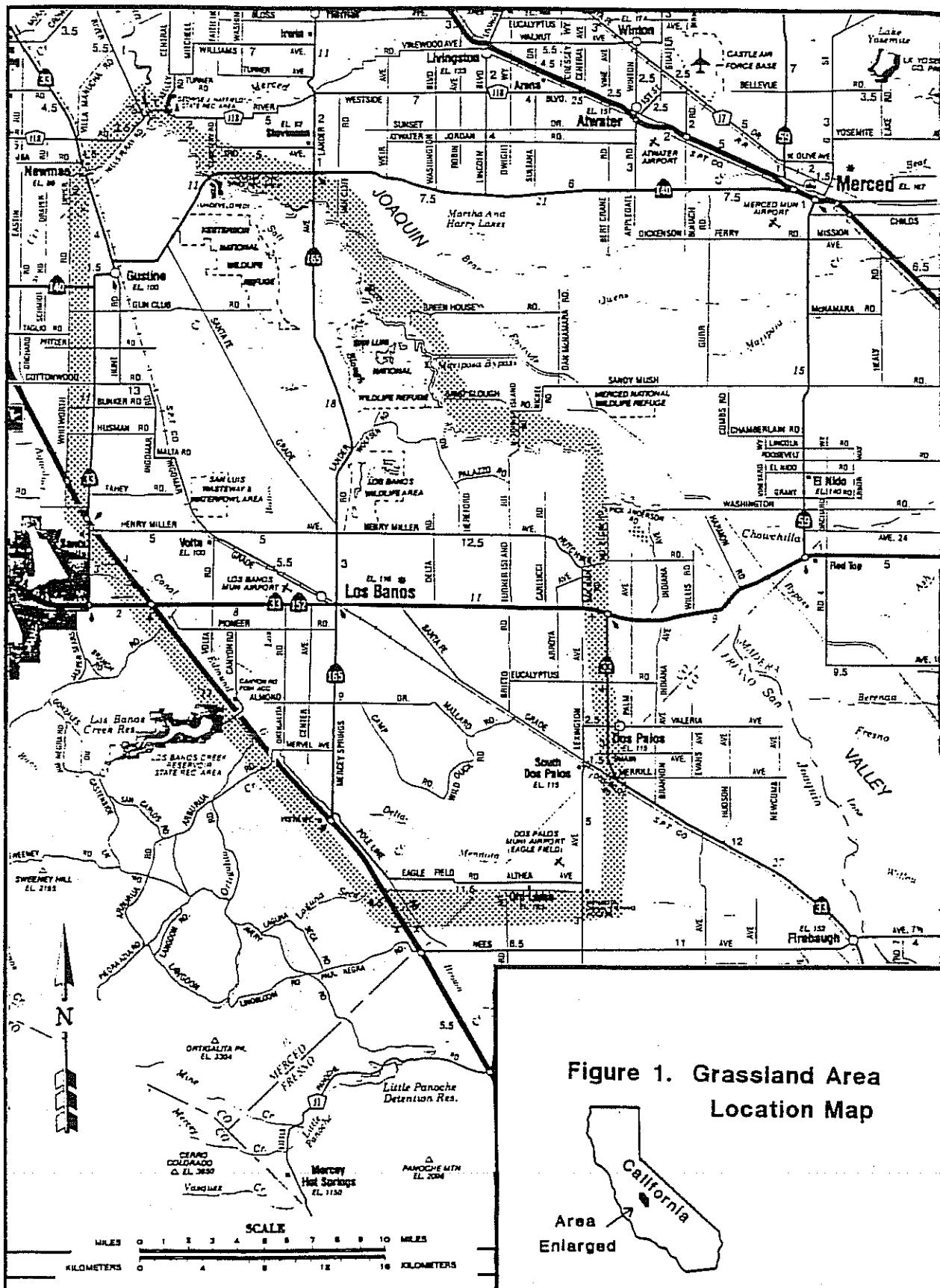


Figure 1. Grassland Area Location Map

Figure 2

Grassland Area of Western Merced County

MONITORING SITES



A quality control and quality assurance program was conducted utilizing spike and duplicate samples in the laboratory. In addition, blind replicate samples were collected at 10 percent of the sites, and 50 percent of the blind replicates were spiked for laboratory quality assurance. Reported results fall within quality assurance tolerance guidelines.

RESULTS

The highest concentrations of the measured constituents were found at the inflow monitoring stations near the southern boundary of the study area. Concentrations at the internal flow and outflow monitoring stations were comparable to each other and were substantially lower than the southern inflows. Water quality analysis results at the inflow, internal flow, and outflow monitoring stations will be discussed separately.

Minerals

Mineral water quality results are listed by site in Appendices A - C; Grassland inflows (Appendix A), internal flows (Appendix B), and outflows (Appendix C). The ranges and median values for each measured mineral constituent at each site are also shown on these tables. Electrical conductivity (EC), boron, chloride, and sulfate were the primary mineral constituents of concern in this monitoring program.

Inflow Monitoring Stations:

The mineral water quality results for the inflow monitoring stations are listed by map index number in Appendix A. The median EC, boron, chloride, and sulfate values at each inflow monitoring station are listed in Table 2. The inflow monitoring stations represent the quality of the agricultural drainage entering the Grassland Area. This drainage is generally a blend of subsurface tile drainage and surface runoff (tailwater) or operational spills from irrigation canals. The direction of surface flow in the study area is generally toward the north with the majority of the influent drains flowing into the Southern Grassland Area from large agricultural areas to the south and southeast. The first ten monitoring stations (I-1 to I-10) listed in Table 2 represent inflow into the South Grassland Area. The remaining three inflow stations (I-11 to I-13) either discharge to sloughs or the North Grassland Area (Fig. 2).

The inflows that carry a substantial portion of subsurface drainage water are the Firebaugh (I-1), Panoche (I-2), Mercy Springs (I-3), Hamburg (I-6), and Charleston Drains (I-8). Each of these sites had elevated salinity levels with the Charleston Drain having the highest median EC (4200 $\mu\text{mhos}/\text{cm}$), chloride (500 mg/L), and sulfate (1400 mg/L) values. The highest median boron (7.4 mg/L) concentration occurred at the Mercy Springs Drain. The higher values likely reflect a greater proportion of tile drainage in the flow and not necessarily the quality of subsurface drainage being discharged at the tile drainage sums. An evaluation of drain water quality at the sums which contribute to the drains is given in Chilcott et al. (1988) and Deverel et al. (1984). Water from these sums

Table 2. Grassland Inflows: Mineral Water Quality Data (Median Values)

| Map Index | Monitoring Site | EC μmhos/cm | B mg/L | Cl mg/L | SO4 mg/L |
|-----------|-------------------------------|----------------|-----------|------------|-------------|
| I-1 | Firebaugh Drain | 2700 | 3.4 | 265 | 755 |
| I-2 | Panoche Drain | 3480 | 6.0 | 440 | 875 |
| I-3 | Mercy Springs | 3750 | 7.4 | 355 | 1100 |
| I-4 | Agatha Canal | 3210 | 5.6 | 400 | 885 |
| I-5 | Helm Canal | 2600 | 4.3 | 300 | 640 |
| I-6 | Hamburg Drain | 3300 | 3.9 | 420 | 950 |
| I-7 | Camp 13 Slough | 2900 | 3.8 | 320 | 795 |
| I-8 | Charleston Drain | 4200 | 4.5 | 500 | 1400 |
| I-9 | Almond Dr. Drain | 1925 | 2.1 | 205 | 395 |
| I-10 | Rice Drain | 3000 | 6.4 | 280 | 770 |
| I-11 | Boundary Drain | 1470 | 0.60 | 220 | 190 |
| I-12 | Salt Slough Ditch/Hereford Rd | 930 | 0.35 | 130 | 110 |
| I-13 | Garzas Creek | 800 | 0.55 | 87 | 110 |

was found to be moderately to highly saline and typically had chloride to sulfate ratios below 0.1. Considerable surface tail water is blended with all these drains upstream of the monitoring sites. The relative proportion of tile drainage water in these drains is high, as the chloride to sulfate ratio in each of these drains rarely exceeds 0.4. This is in contrast to sites which carry a relatively small proportion of subsurface drainage such as Salt Slough Ditch at Hereford Road (I-12) and Garzas Creek (I-13) where the chloride to sulfate ratios are rarely below 1.0.

Elevated boron concentrations are also typical in the subsurface agricultural drainage from the southwestern portion of the San Joaquin River Basin. The presence of substantial portions of subsurface drainage water can be noted by the median boron values for each inflow site (Table 2). The drains entering the South Grassland Area from the south and southeast are carrying a substantial boron load compared to those entering from the west (I-9 and I-13) and northeast of the South Grassland (I-11 and I-12).

The Agatha Canal (I-4) and Camp 13 Slough (I-7) are major transport drains carrying the drainage water north once it has been discharged to the South Grassland Area. They both carry a substantial proportion of subsurface drainage, but the proportion of subsurface drainage in these two drains varies greatly because their flows consist of a mixture of water from two or more of the main drains entering this area. The complexity of this system makes it difficult to assess the trends in quality, however, they are presented here to show the variations in quality that occur in canals that receive multiple sources of drainage water prior to flowing into the South Grassland Area.

Internal Flow Monitoring Stations:

Mineral water quality analysis results for the internal flow stations are listed by map index number in Appendix B. These monitoring stations were located on drains that carry or could carry subsurface agricultural drainage as it passes

through the Grassland Area. These internal drains make up a network of canals in which water is diverted in various routes, once it leaves the South Grassland Area. Santa Fe Canal (T-4) receives the majority of the drainage water leaving the South Grassland Area, and therefore can carry a relatively high proportion of subsurface drainage. The San Luis Canal (T-7) drains the western portion of the South Grassland and carries surface and subsurface agricultural drainage as well as operational spill water from the Central California Irrigation District (CCID). Flows from the Santa Fe and San Luis Canals are mixed as they flow together in an open intersection located north of Highway 152, approximately three miles south of Henry Miller Road. (Figure 2). Just upstream of this intersection, water from the Santa Fe Canal can be diverted to the Santa Fe Canal - Mud Slough (South) Diversion (O-7), an outflow monitoring site which discharges to Mud Slough (South). Water that reaches the intersection can be diverted to flow into the Santa Fe Canal, the San Luis Canal, or both of these canals and is transported to the North Grassland Area. The San Luis Canal, just downstream of this intersection (after mixing with the Santa Fe Canal) can discharge part of its flow to City Ditch (O-6), another outflow drain that discharges to Mud Slough (South). All water that is not discharged to Mud Slough (South), through either of these two outflows (O-6 and O-7), is transported into the North Grassland Area where it can again be diverted in various routes before flowing out of the Grassland Area. For this reason, the source or combination of sources of flow to a particular internal flow drain can vary from one sampling occurrence to another.

The median EC, boron, chloride, and sulfate values recorded during this study for each of the internal flow monitoring stations are listed in Table 3.

Table 3. Grassland Internal Flows: Mineral Water Quality Data (Medians)

| Map Index | Monitoring Site | EC μmhos/cm | B mg/L | Cl mg/L | SO ₄ mg/L |
|-----------|---------------------|----------------|-----------|------------|-------------------------|
| T-1 | CCID/Russell | 573 | 0.25 | 73 | 53 |
| T-2 | CCID/Almond | 585 | 0.35 | 71 | 80 |
| T-3 | CCID/Gun Club Rd. | 680 | 0.37 | 65 | 91 |
| T-4 | Santa Fe Canal/152 | 2200 | 3.4 | 260 | 580 |
| T-5 | Santa Fe Canal/HMR | 2100 | 3.0 | 230 | 536 |
| T-6 | Santa Fe Canal/152 | 1900 | 2.4 | 230 | 400 |
| T-7 | San Luis Canal/152 | 2550 | 2.3 | 210 | 420 |
| T-8 | Los Banos Creek/GCR | 1300 | 1.2 | 170 | 200 |
| T-9 | Eagle Ditch | 1800 | 1.7 | 230 | 260 |
| T-10 | Mud Slough (N)/GCR | 2950 | 3.2 | 380 | 660 |
| T-11 | Fremont Canal/GCR | 2600 | 3.5 | 290 | 710 |
| T-12 | Gustine WWTP Ditch | 2800 | 1.1 | 380 | 120 |

The first three stations (T-1 to T-3) listed in this table are on the Central California Irrigation District (CCID) Main Canal, which carries irrigation supply water from the Mendota Pool and has much lower EC, boron, chloride, and sulfate concentrations than the other internal flow monitoring stations. The Main Canal does take in some subsurface agricultural drainage which is blended with the good quality irrigation water. The median chloride to sulfate ratio in the CCID Main Canal was 1.4 at the Russell Avenue station (T-1) and 0.7 downstream at the Gun Club Road station. This shows that a portion of the subsurface drainage water is introduced to the canal supply, but it is not of large enough quantity to impair the CCID Main Canal for agricultural beneficial use. For example, the highest boron level recorded at any of the CCID Main Canal stations was 0.6 mg/L and this occurred during the nonirrigation season.

All of the internal canals in the Grassland Area receive or have received some portion of subsurface drainage water. As the flows are strongly regulated by an extensive system of man-made structures, no conclusions can be drawn from the data other than to show the relative water quality measured during this monitoring program. Ranges of the measured values are presented in Appendix B.

Outflow Monitoring Stations:

Mineral water quality analysis results for the outflow stations are listed by map index number in Appendix C. The median EC, boron, chloride, and sulfate values for each of the outflow monitoring stations are tabulated in Table 4.

Table 4. Grassland Outflows: Mineral Water Quality Data (Median Values)

| Map Index | Monitoring Site | EC μmhos/cm | B mg/L | Cl mg/L | SO ₄ mg/L |
|-----------|----------------------|----------------|-----------|------------|-------------------------|
| O-1 | Mud Slough (N)/NLC | 2360 | 2.2 | 300 | 420 |
| O-2 | Mud Slough (N)/140 | 2600 | 2.8 | 320 | 510 |
| O-3 | Los Banos Creek/140 | 2250 | 1.8 | 260 | 265 |
| O-4 | Salt Slough/Lander | 1910 | 1.7 | 260 | 370 |
| O-5 | Salt Slough/Wolfsen | 1690 | 1.5 | 220 | 250 |
| O-6 | City Ditch | 2700 | 3.8 | 300 | 660 |
| O-7 | Santa Fe Canal/MSDiv | 2700 | 4.0 | 320 | 640 |

Mud and Salt Sloughs are the only two tributaries to the San Joaquin River which drain the Grassland Area. For this reason, Grassland Area outflow monitoring stations can be divided into two groups; the Mud Slough (O-1 to O-3) and the Salt Slough tributary outflows (O-4 to O-7).

The Salt Slough tributary outflow monitoring stations consist of the Santa Fe Canal-Mud Slough (South) Diversion (O-7), City Ditch (O-6), and the Salt Slough stations at Wolfsen Road (O-5) and Lander Avenue (O-4). The Santa Fe Canal - Mud Slough (South) Diversion and City Ditch both discharge into Mud Slough

(South) which is a tributary of Salt Slough. The two Salt Slough stations are located downstream of the Mud Slough (South) confluence and, therefore, represent the water quality of Salt Slough after it has been mixed with Mud Slough (South) water. Mud Slough (South) is inaccessible for routine monitoring, but the water quality of Mud Slough (South) can be examined indirectly by comparing constituent concentrations measured upstream and downstream of the Mud Slough (South) inflow to Salt Slough (I-12 and O-5, respectively). There are 45 to 50 surface drains that flow to this reach of Salt Slough, all of which drain small areas (Thomasson, 1988) and probably carry relatively low EC and boron values, so increases in concentrations at Wolfsen Road for EC and B, or any other constituent associated with subsurface drainage are probably contributed by Mud Slough (South). Salt Slough at Lander Avenue (O-4), located downstream of Wolfsen Road, is the furthest downstream of the Salt Slough monitoring stations, and it very closely represents the quality of Salt Slough water being discharged to the San Joaquin River (Fig. 2).

The Mud Slough tributary outflow monitoring stations consist of Los Banos Creek at Highway 140 (O-3) and two Mud Slough (North) stations; Highway 140 (O-2) and the Newman Land and Cattle Company (O-1) sites. Los Banos Creek receives drainage from the western portion of the North Grassland Area and areas west of the study area and generally carries only a small proportion of subsurface drainage. Mud Slough (North) receives all the drainage from the South Grassland that is passed through the North Grassland Area, as well as drainage from within the North Grassland. Mud Slough (North) at Highway 140 can carry a relatively high proportion of tile drainage at times, but it is highly variable due to variations in water diversions and control upstream in the Grassland Area. The Mud Slough (North) at the Newman Land and Cattle Company station is located downstream of the Los Banos Creek confluence to the slough, so it consists of a blend of Los Banos Creek and Mud Slough water (Fig. 2). Los Banos Creek generally has a diluting effect on Mud Slough (North) as measured at the Newman Land and Cattle Company station. The Newman Land and Cattle Company station is the furthest downstream of the Mud Slough (North) monitoring stations and, therefore, closely represents the quality of water being discharged to the San Joaquin River by Mud Slough (North).

Both Salt Slough and Mud Slough (North) carry a significant portion of subsurface drainage water. The ratios of the median chloride to sulfate values in these two sloughs are 0.7 and 0.6, respectively. For comparison, Los Banos Creek, which carries very little subsurface agricultural drainage, has a median chloride to sulfate ratio of 1.0.

The City Ditch and the Santa Fe Canal - Mud Slough (South) Diversion (0-6 and 0-7) carry the highest proportion of drainage water of all the outflow monitoring stations. City Ditch and the Santa Fe Canal - Mud Slough (South) Diversion had the highest median EC ($2700 \mu\text{mhos/cm}$), boron (3.8 and 4.0 mg/L, respectively), and sulfate (660 and 640 mg/L, respectively) values of all the outflow monitoring stations (Table 4). Median chloride values at City Ditch and the Santa Fe Canal - Mud Slough (South) Diversion are also among the highest of the outflows. These two drains carry essentially the same water, as their comparable constituent concentrations suggest. Their impact on the water quality of Mud Slough (South)

is probably great, but no water quality monitoring was conducted on Mud Slough (South) in this study to assess this impact. The diversion of subsurface drainage water into Mud Slough (South) does contribute to salt and boron loading to Salt Slough. The EC and boron values on any given day at the Salt Slough at Wolfsen Road station (O-5), located downstream of the Mud Slough (South) confluence, are generally 2 to 3 times higher than values measured upstream of the confluence at Salt Slough Ditch at Hereford Road (I-12).

Salt Slough at Lander Avenue (O-4), as mentioned before, is the last monitoring station before Salt Slough discharges to the San Joaquin River. The EC and boron values at Lander Avenue are very comparable to those found just upstream at Wolfsen Road (O-5), and although there are sources of drainage entering Salt Slough between these two stations (Thomasson, 1988), their effect on water quality is not likely significant. The relative concentrations at these two sites can be visualized on the graphs in Figure 3 where EC and boron concentrations at Wolfsen Road have been plotted against those at Lander Avenue. On these graphs, a slope of 1 indicates that concentrations at the two sites are equal, while a slope less than 1 indicates that Wolfsen Road would generally have a higher concentration than Lander Avenue. The boron and EC graphs have a slope of 0.97, which indicates that both EC and boron concentrations are essentially equal at these two sites.

Salt Slough at Lander Avenue had EC values ranging from 780 to 3700 $\mu\text{mhos}/\text{cm}$ with a median value of 1910 $\mu\text{mhos}/\text{cm}$, and boron values ranging from 0.43 to 3.9 mg/L with a median of 1.7 mg/L (Appendix C). EC and boron concentrations at this site are extremely variable because of the frequent changes of water diversion patterns within the Grassland area, but concentrations at this site are generally lower than the South Grassland inflow monitoring stations due to additional dilution that occurs as the drainage water moves further downstream.

The Mud Slough tributary outflow stations (O-1, O-2, and O-3) have comparable EC and boron concentrations, but Mud Slough at Highway 140 generally has the highest values and Los Banos Creek at Highway 140 the lowest for a given sample date. There appears to be a slight dilution of Mud Slough (North) downstream of the Los Banos Creek confluence. EC and boron concentrations at the Newman Land and Cattle Company site range from being essentially equal to one half the concentrations found upstream at Highway 140.

Mud Slough (North) at Highway 140 is a principle monitoring station in this monitoring program, and best represents, as does Salt Slough at Lander Avenue, the water quality of the drainage leaving the Grassland Area. Mud Slough at Highway 140 had EC values ranging from 1300 to 6620 $\mu\text{mhos}/\text{cm}$ with a median of 2600 $\mu\text{mhos}/\text{cm}$. Boron at this site ranged from 1.1 to 5.6 mg/L with a median value of 2.8 mg/L.

In an attempt to identify possible trends in EC and boron concentrations found in water leaving the Grassland Area, three month continuous means were calculated and graphed for Salt Slough at Lander Avenue (O-4) and Mud Slough (North) at Highway 140 (O-2). Three month continuous means were used to

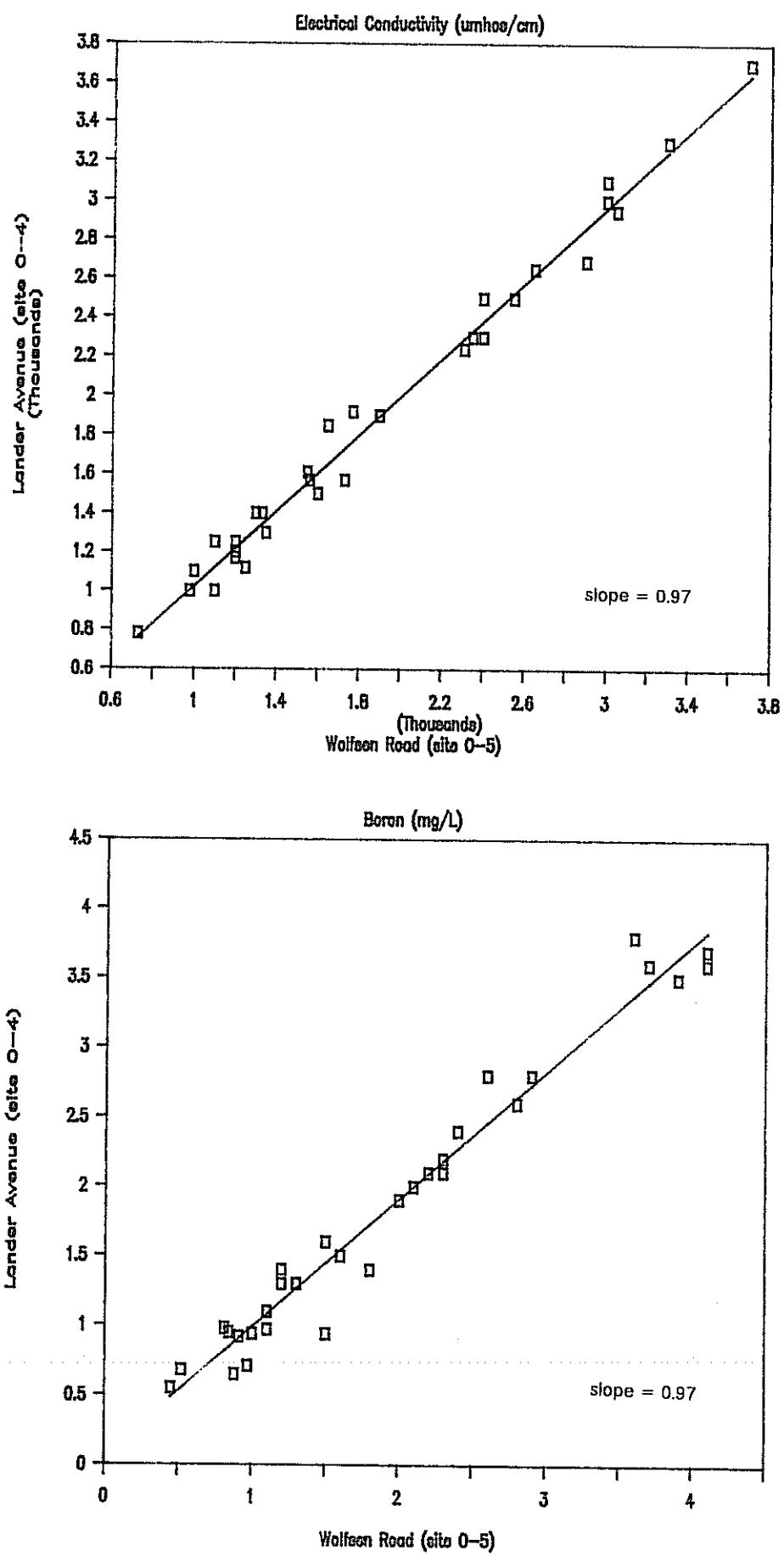


Figure 3 EC and boron concentrations at Salt Slough outflow stations: Wolfsen Road and Lander Avenue.

identify trends because they have a dampening effect on the extreme values that can occur in monitoring programs, such as this, where grab samples are only collected once a month. These four graphs (Figures 4 and 5) reveal that EC and boron concentrations generally increase during the non-irrigation season (October to March) and decrease during the irrigation season (April to September). A reasonable explanation for this trend is that during the irrigation season, a large proportion of the flow in the Grassland Area drains consists of surface agricultural runoff (tail water) which dilutes the subsurface agricultural drainage, thus lowering the EC and boron concentrations. During the non-irrigation season, there is no surface runoff, so the drains carry a higher proportion of subsurface agricultural drainage, and consequently, EC and boron values are higher.

Trace Elements

Total recoverable selenium, molybdenum, copper, chromium, nickel, lead, zinc, and mercury analysis results are tabulated in Appendix D, E, and F for the inflow, internal flow and outflow monitoring stations, respectively. The ranges and median concentrations for each measured trace element constituent at each monitoring station are listed in these tables.

Inflow Monitoring Stations:

The trace element results for the inflow monitoring stations are listed by map index number in Appendix D. The median trace element concentrations at each of the inflow monitoring stations are tabulated in Table 5.

Table 5. Grassland Inflows: Trace Element Water Quality Data (Medians)

| Map Index | Monitoring Site | Se | Mo | Cu | Cr | Ni | Zn |
|-----------|--------------------------------|----------------------------|----|----|----|----|----|
| | | total recoverable - µg/L - | | | | | |
| I-1 | Firebaugh Drain | 47 | 13 | 9 | 18 | 21 | 23 |
| I-2 | Panoche Drain | 52 | 4 | 9 | 32 | 14 | 18 |
| I-3 | Mercy Springs | 9.5 | 16 | 4 | 7 | 11 | 10 |
| I-4 | Agatha Canal | 36 | <5 | 9 | 13 | 17 | 16 |
| I-5 | Helm Canal | 20 | <5 | 4 | 4 | 6 | 11 |
| I-6 | Hamburg Drain | 54 | 4 | 5 | 14 | 10 | 11 |
| I-7 | Camp 13 Slough | 43 | <5 | 7 | 14 | 13 | 17 |
| I-8 | Charleston Drain | 75 | 6 | 10 | 12 | 20 | 32 |
| I-9 | Almond Dr. Drain | 4.5 | 5 | 7 | 16 | 13 | 15 |
| I-10 | Rice Drain | 2.6 | 14 | 5 | 5 | 13 | 9 |
| I-11 | Boundary Drain | 1.1 | 5 | 6 | 2 | 8 | 14 |
| I-12 | Salt Slough Ditch/Hereford Rd. | 1.0 | 3 | 4 | 3 | 8 | 13 |
| I-13 | Garzas Creek | 1.7 | <5 | 4 | 4 | 8 | 7 |

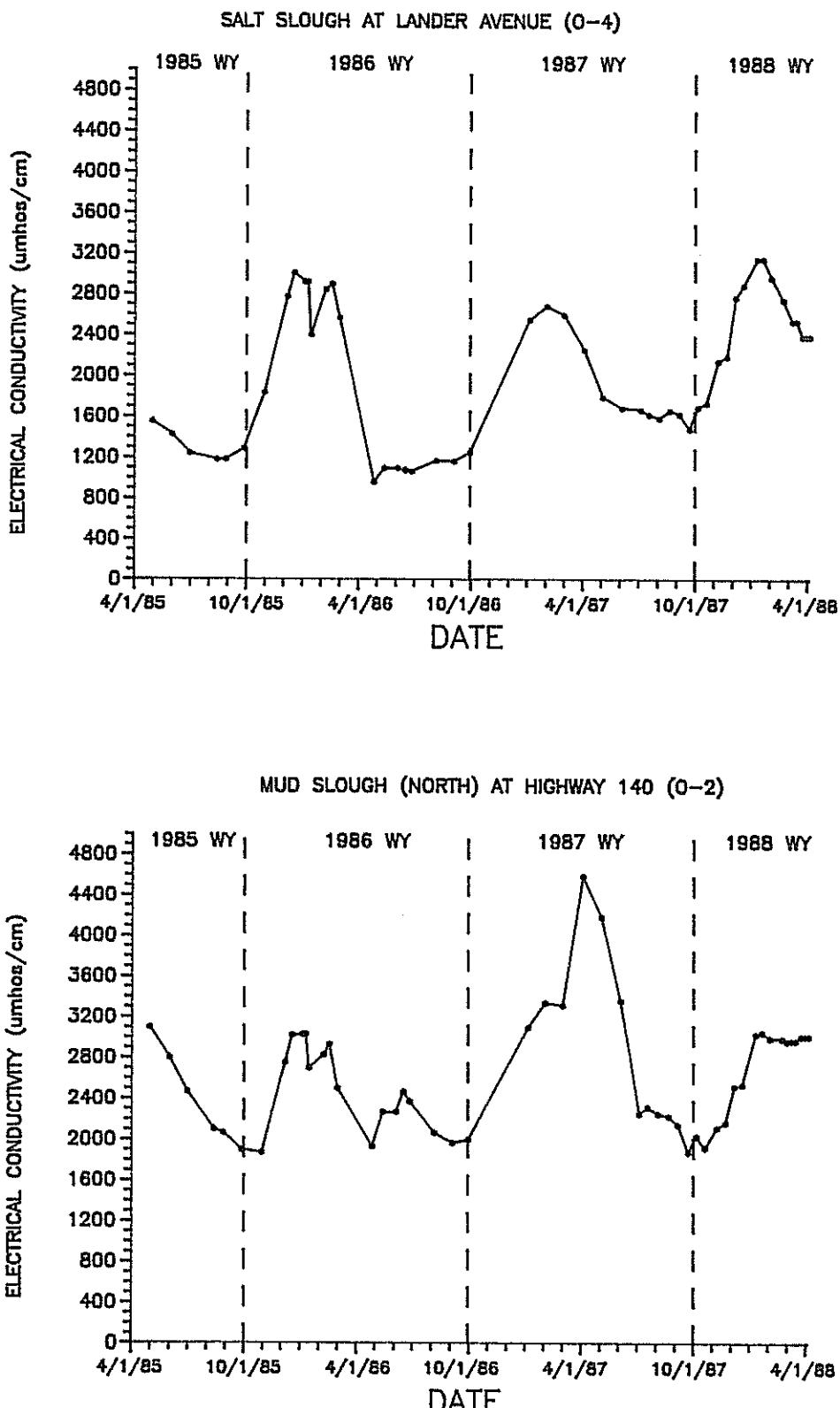


Figure 4 Three month continuous means of electrical conductivity at the two major outflow monitoring stations.

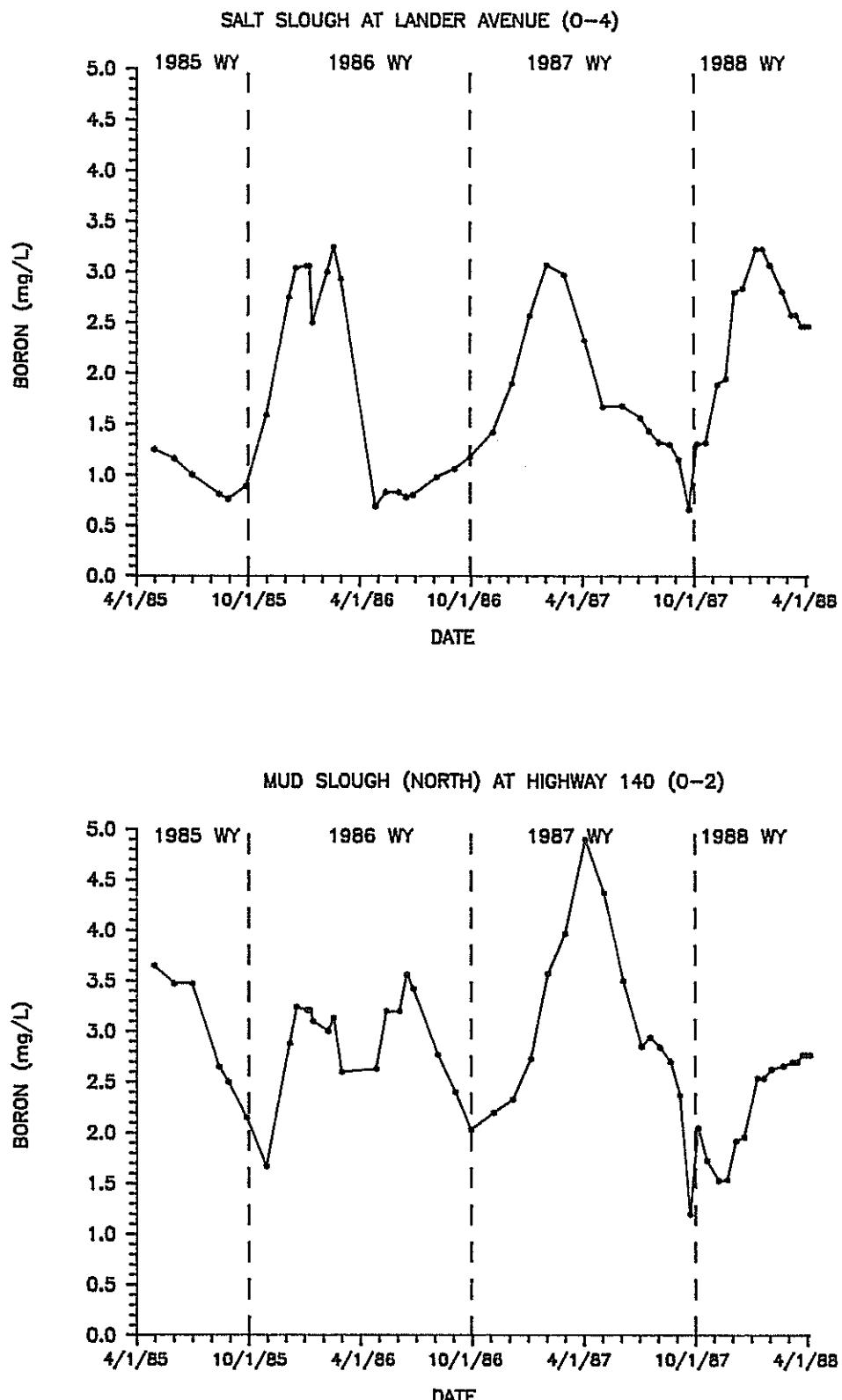


Figure 5 Three month continuous means of boron concentrations at the two major outflow monitoring stations.

The highest median trace element concentrations occurred at the ten South Grassland inflow stations (I-1 to I-10), where the median selenium values ranged from 2.6 µg/L at Rice Drain (I-10) to 75 µg/L at Charleston Drain (I-8). Firebaugh (I-1), Panoche (I-2), Hamburg (I-6), and Charleston Drains (I-8) had the highest median selenium concentrations, however, as with salinity and boron discussed earlier, the concentrations are highly dependent upon the amount of dilution water in the canal or drain at the time of sampling. Total recoverable selenium concentrations have been found in excess of 100 µg/L at Charleston Drain (10 times), Firebaugh Drain (3 times), and Panoche Drain (1 time) indicating that little surface runoff was available for dilution at that time. These higher concentrations have been found primarily during the non-irrigation season (December - March).

Flows entering these four drains (I-1, I-2, I-6, and I-8) are principally from westside alluvial fan deposits which have been shown to carry the highest selenium concentrations (Chilcott et al., 1988 and Deverel et al., 1984). Mercy Springs Drain (I-3), Almond Drive Drain (I-9), and Rice Drain (I-10) carry drainage water principally from the basin rim deposits known to have significantly lower selenium concentrations. The basin rim deposits consist chiefly of sedimentary material from the Coast Range as do the alluvial fan deposits, but the soils are more saline than those found on the alluvial fans (Deverel et al., 1984). Boundary Drain (I-11) and Salt Slough Ditch at Hereford Road (I-12) represent flows from basin trough deposits which contain ground water with very low selenium concentrations (Deverel et al., 1984; and Chilcott et al., 1988). The basin trough deposits consist of a mixture of sediments from the Coast Range and other sources and the soils have a low salinity (Deverel et al., 1984).

The Firebaugh Drain (I-1), Mercy Springs Drain (I-3), and Rice Drain (I-10) had the highest median molybdenum concentrations. All of these drains receive flow from areas with basin rim geologic deposits. Previous work by the United States Geological Survey (USGS) and this Regional Board in the western San Joaquin Valley have shown that subsurface agricultural drains (tile drain sumps) and shallow wells tapping basin rim deposits have significantly higher molybdenum concentrations than those found in tile drains and shallow wells tapping basin trough and alluvial fan deposits (Deverel et al., 1984 and Chilcott et al., 1988). A similar finding of molybdenum in drainage water entering evaporation basins in the Tulare Lake Basin was associated with the same types of deposits (Westcot et al., 1988). Results of this study confirm much lower molybdenum concentrations in drainage discharges from the alluvial fan deposits (I-2, I-6, and I-8). Firebaugh Drain (I-1), although having one of the highest median molybdenum concentrations, has flow that is generated from both alluvial fan and basin rim deposits. This may indicate that relatively high concentrations of molybdenum are associated with certain sections of the drainage area producing flow that passes through this site.

The median total recoverable copper concentrations ranged from 4 to 10 µg/L at the inflow monitoring stations. Some of these drains could contain copper at concentrations above the criterion for the protection of freshwater aquatic life (Table 6), but all the criteria values for the protection of freshwater aquatic life are based on acid soluble metals, whereas the trace element results in this study are total recoverable concentrations. For a given sample, the total recoverable

Table 6. Water Quality Guidelines and Criteria for the Protection of Beneficial Uses

| Constituent | Domestic/Municipal Drinking Water | | | Ambient water quality criteria to protect freshwater aquatic life | | | Degree of Restriction on Use | | | Stock Water - mg/l - |
|------------------|-----------------------------------|-----------|----------------|---|----------------|------------|------------------------------|-----------|------------------|-------------------------|
| | Primary | Secondary | Other (health) | 4 day average | 1 hour average | - µg/l - * | None | Moderate | Slight to Severe | |
| Arsenic | 50 | | | 190 | 360 | 0.1 | < 0.7 | 0.7 - 3.0 | > 3.0 | 0.2 |
| Boron | | | | | | | 0.01 | 0.1 | | 5 |
| Cadmium | 10 | | | 0.55 | 1.4 | | | | | 0.05 |
| Chromium (VI) | 50 | 1000 | 300 | 11 | 16 | | 0.1 | | | 1 |
| Copper | | | | 5.4 | 7.5 | 0.2 | | | | 0.5 |
| Iron | | | | | | | 5 | | | |
| Lead (inorganic) | 50 | | | 0.99 | 25 | | | | | 0.1 |
| Mercury | 2 | | | 0.012 | 2.4 | | | | | 0.01 |
| Molybdenum | | | | | | | 0.01 | | | |
| Nickel | | | | | | | 0.02 | | | |
| Selenium | 10 | | | 70 | 73 | 653 | | | | 0.05 |
| Silver | 50 | 5000 | 500 | 5 | 5 | 20 | | | | |
| Zinc | | | | | | | 0.02 | | | |
| TDS (mg/l) | | | | | | | | 2 | 450 - 2000 | 24 |
| EC | | | | | | | < 450 | < 700 | 700 - 3000 | > 3000 |
| | | | | | | | | | | < 5000 |

* Acid soluble metals

† Recommended value (Recommended level = 500 mg/l; Maximum = 1000 mg/l; Short term level = 1500 mg/l)
 (References: Ayers and Westcot, 1985; EPA, 1987; EPA, 1985a; EPA, 1985b; EPA, 1980; EPA, 1987; Marshack, 1987;
 and SWRCB, 1987.)

concentrations are generally higher than acid soluble concentrations (Marshack, personal communication).

Slightly elevated total recoverable zinc concentrations were present in several of the inflow drains, but it was not found at levels above any of the water quality guidelines and criteria for the protection of beneficial uses (Table 6). Median zinc concentrations ranged from 7 to 32 µg/L. Earlier USGS and Regional Board studies also found slightly elevated zinc concentrations in areas that drain to the Grassland Area (Deverel et al., 1984, and Chilcott et al., 1988). Zinc was found in water from all three types of deposits: alluvial fan, basin rim, and basin trough.

The median total recoverable chromium concentrations ranged from 2 to 32 µg/L, with the highest occurring in drains that receive drainage from the south. Hexavalent chromium (Cr +6) is the species of chromium of most concern to beneficial uses, but all values presented in this program to date are total recoverable concentrations. Analysis for acid soluble hexavalent chromium would be needed to evaluate the impact of chromium on the quality of water in these drains.

Chromium is commonly found in shallow water in the western San Joaquin Valley south of the study area, especially in water derived from alluvial fan deposits (Deverel et al., 1984, and Chilcott et al., 1988). The highest chromium concentrations found in this monitoring program occurred in the Panoche Drain which receives its flow from areas with alluvial fan deposits.

Total recoverable nickel concentrations were slightly elevated, but all values were below water quality guidelines (Table 6). The highest median nickel concentrations occurred at Firebaugh and Charleston Drains (I-1 and I-8). The U.S. Bureau of Reclamation reported similar total recoverable nickel concentrations in tile drainage sumps located south of the study area between Ora Loma and Mendota. The value at each sump varied widely, but the median values ranged from 6 to 14 µg/L (Deverel et al., 1984). Regional Board data from approximately 200 tile drain sumps in this same general area reported that nickel concentrations were generally lower than the 5 µg/L detection limit (Chilcott et al., 1988).

Total recoverable lead concentrations were generally undetected at the 5 µg/L detection limit at all inflow monitoring stations. Total recoverable mercury was undetected at the 0.2 and 0.5 µg/L detection limits at all inflow stations.

Internal Flow Monitoring Stations:

Trace element results for the internal Grassland Area monitoring stations are listed by map index number in Appendix E. The median trace element concentrations at each of the internal stations are tabulated in Table 7.

**Table 7. Grassland Internal Flows: Trace Element Water Quality Data
(Median Values)**

| Map Index | Monitoring Site | Se | Mo | Cu | Cr | Ni | Zn |
|-----------|---------------------|----------------------------|----|----|----|----|----|
| | | total recoverable - µg/L - | | | | | |
| T-1 | CCID/Russell | 1.6 | <5 | 3 | 2 | 5 | 6 |
| T-2 | CCID/Almond | 1.3 | <5 | 3 | 3 | 3 | 6 |
| T-3 | CCID/Gun Club Rd. | 1.1 | <5 | 3 | 3 | 5 | 8 |
| T-4 | Santa Fe Canal/152 | 27 | 26 | 8 | 15 | 21 | 17 |
| T-5 | Santa Fe Canal/HMR | 25 | <5 | 7 | 9 | 19 | 16 |
| T-6 | Santa Fe Canal/GCR | 7.5 | 6 | 6 | 11 | 19 | 13 |
| T-7 | San Luis Canal/152 | 3.1 | <5 | 4 | 4 | 9 | 7 |
| T-8 | Los Banos Creek/GCR | 1.0 | <5 | 4 | 4 | 10 | 8 |
| T-9 | Eagle Ditch | 1.7 | 5 | 4 | 5 | 13 | 2 |
| T-10 | Mud Slough (N)/GCR | 2 | 17 | 3 | 3 | 10 | 3 |
| T-11 | Fremont Canal/GCR | 16 | 10 | 5 | 6 | 12 | 11 |
| T-12 | Gustine STP Ditch | 1.0 | <5 | 3 | 14 | 9 | 6 |

The concentrations found at the internal monitoring points within the Grassland Area reflect the proportional amount of subsurface drainage water passing through that point. For example those canals and drains carrying the greatest proportion of subsurface drainage are showing the highest median selenium concentrations.

Median selenium values at the internal Grassland Area stations ranged from 1 µg/L at the Los Banos Creek at Gun Club Road (T-8) and Gustine WWTP Ditch (T-12) stations to 27 µg/L at Santa Fe Canal at Highway 152 (T-4). Santa Fe Canal at Highway 152 had selenium concentrations that ranged from 4 to 39 µg/L. Santa Fe Canal at Henry Miller Road (T-5), located downstream of the intersection with San Luis Canal, had a median selenium concentration of 25 µg/L and a range of 2.2 to 37 µg/L. A large proportion of the flow in Santa Fe Canal is derived from the South Grassland inflow drains as suggested by its relatively high selenium concentrations. Median selenium concentrations at the 3 CCID Main Canal stations were low ranging from 1.1 to 1.6 µg/L.

The median selenium concentrations in the internal flow drains were sharply reduced from those found in the drains entering the South Grassland Area (Table 5). This illustrates that a significant amount of blending and dilution is likely occurring as the selenium passes through the Grassland Area. Data for the other trace elements in the internal flow drains are not as complete as for selenium and the data sets are too small for comparison, but most of the other trace element concentrations appear to have been significantly reduced from those found at the south inflow stations. Santa Fe Canal at Highway 152 also had the highest median copper (8 µg/L), chromium (15 µg/L), nickel (21 µg/L), and zinc (17 µg/L) concentrations. The highest median molybdenum concentrations were found at Mud Slough (North) at Gun Club Road (T-10). Molybdenum concentrations at this site have ranged from 9 to 68 µg/L with a median of 17 µg/L. This site does not routinely receive upslope subsurface drainage water flows, but it does receive

drainage from an area in the North Grassland that has both basin rim and basin trough deposits; the former of which is known to carry elevated levels of molybdenum (Deverel et al., 1984, and Chilcott et al., 1988). This site is immediately adjacent to Kesterson Reservoir, a site known to have received drainage water for over four years before the site was closed. Further monitoring will be needed to determine the exact source of the elevated molybdenum.

Outflow Monitoring Stations:

Trace element results at the outflow monitoring sites are listed by map index number in Appendix F. The median trace element concentrations at each of the outflow stations are listed in Table 8.

Table 8. Grassland Outflows: Trace Element Water Quality Data (Medians)

| Map Index | Monitoring Site | Se | Mo | Cu | Cr | Ni | Zn |
|-----------|----------------------|----------------------------|----|----|----|----|----|
| | | total recoverable - µg/L - | | | | | |
| O-1 | Mud Slough (N)/NLC | 4.3 | 5 | 4 | 8 | 10 | 13 |
| O-2 | Mud Slough (N)/140 | 8.0 | 9 | 7 | 6 | 13 | 10 |
| O-3 | Los Banos Creek/140 | 1.0 | <5 | 8 | 6 | 18 | 17 |
| O-4 | Salt Slough/Lander | 9.5 | 7 | 6 | 4 | 10 | 18 |
| O-5 | Salt Slough/Wolfsen | 10 | 6 | 8 | 6 | 10 | 19 |
| O-6 | City Ditch | 30 | 8 | 7 | 14 | 16 | 22 |
| O-7 | Santa Fe Canal/MSDiv | 32 | 11 | 5 | 12 | 10 | 12 |

The outflow monitoring stations, as mentioned earlier, are related to one of two tributaries of the San Joaquin River; those that outflow through Salt Slough (sites O-4 and O-7), and those that outflow through Mud Slough (North), (sites O-1 to O-3).

The Salt Slough tributary outflows consist of the Santa Fe Canal - Mud Slough (South) Diversion (O-7), City Ditch (O-6), and the two Salt Slough stations (O-4 and O-5) located downstream of the Mud Slough (South) confluence. The Santa Fe Canal - Mud Slough (South) Diversion and City Ditch had the highest median selenium (32 and 30 µg/L, respectively) concentrations of all the outflow monitoring stations. These two outflow stations receive their flows from essentially the same source, the Santa Fe Canal, which was previously mentioned in the discussion of internal monitoring points as having the highest median selenium, molybdenum, copper, chromium, nickel, and zinc concentrations. The source of the flow to the Diversion (O-7) is the Santa Fe Canal from a point just upstream of the intersection, where it is blended with San Luis Canal water. The source of water to City Ditch is the San Luis Canal at a point downstream of the intersection with Santa Fe Canal. Therefore, City Ditch consists of a blend of Santa Fe Canal and San Luis Canal water. The water quality data at these two outflow stations are very similar.

The next outflow station is Salt Slough at Wolfsen Road (O-5) located just downstream of the Mud Slough (South) confluence, through which, the drainage

from City Ditch and the Santa Fe Canal - Mud Slough (South) Diversion is discharged to Salt Slough. The median selenium concentration (10 µg/L) at Salt Slough at Wolfsen Road is approximately three times lower than that found at City Ditch and the Santa Fe Canal - Mud Slough (South) Diversion. Downstream of these two drains, Mud Slough (South) is inaccessible for routine monitoring, so the concentrations discharged to Salt Slough by Mud Slough (South) are not directly known, but Salt Slough Ditch at Hereford Road (I-12), located just upstream of the Mud Slough (South) confluence has a median selenium concentration (1 µg/L) ten times lower than downstream of this confluence at Wolfsen Road (O-5). Comparing data for samples collected on the same day at these two stations show that the selenium concentrations can range from 6 to 20 times higher at Wolfsen Road than at Hereford Road, which indicates that the flow from Mud Slough (South) has a substantial impact on the water quality of Salt Slough with regard to selenium.

Selenium concentrations at the furthest downstream monitoring station on Salt Slough at Lander Avenue, (O-4), are essentially unchanged from those found upstream at Wolfsen Road for any given day. This can be seen in the graph in Figure 6, where selenium concentrations at these two sites have been plotted against each other. The slope of the line of best fit is 0.81, which is different from the slopes found for EC and boron as shown in Figure 3. The difference is likely related to the greater natural and analytical variability at such low detection levels. A slope of 1 would indicate that concentrations at the two sites were essentially equal.

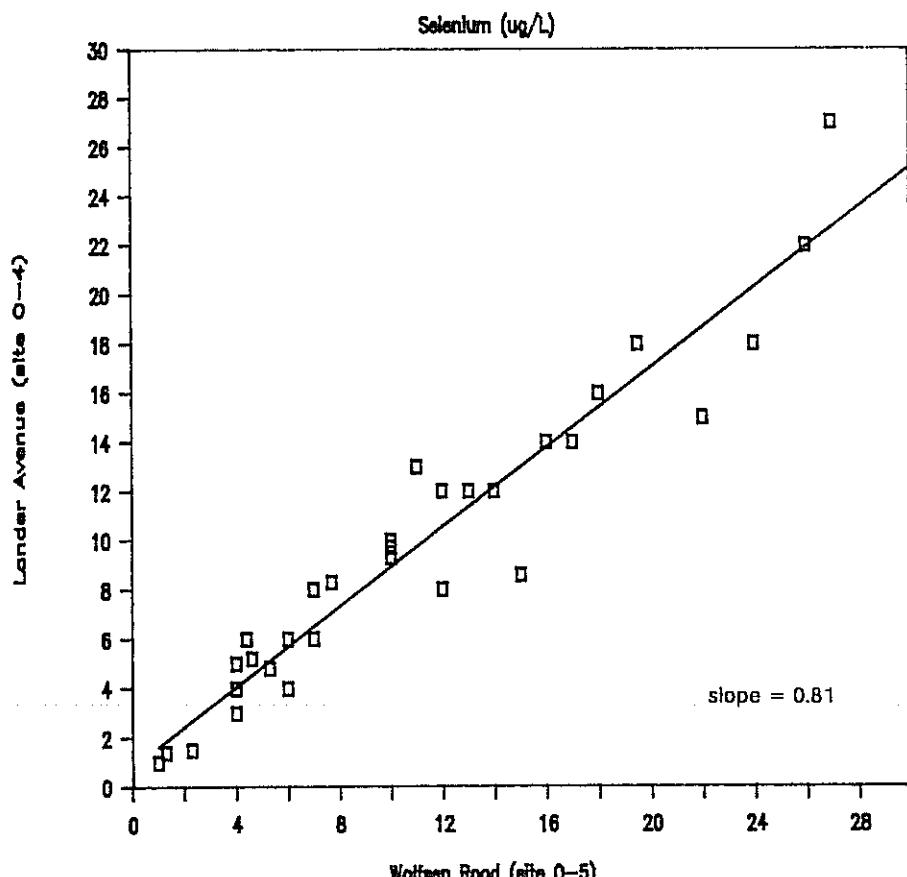


Figure 6 Selenium concentrations at Salt Slough outflow stations: Wolfsen Road and Lander Avenue.

Selenium concentrations in Salt Slough at Lander Avenue ranged from less than 1 to 32 µg/L with a median of 9.5 µg/L, while selenium concentrations at Wolfsen Road ranged from less than 1 to 34 µg/L with a median of 10 µg/L. There are 23 small surface runoff drains that flow to Salt Slough between these two stations (Thomasson, 1988), but they do not appear to have a substantial impact on water quality.

All drainage water in the Santa Fe and San Luis Canals that is not diverted to either the Santa Fe Canal - Mud Slough (South) Diversion or City Ditch is transported to the North Grassland Area and ultimately flows into Mud Slough (North). Mud Slough (North) at Highway 140 (O-2) therefore contains drainage water from the South Grassland Area, as well as from the North Grassland Area. Selenium concentration at Mud Slough (North) at Highway 140 ranged from 1 to 32 µg/L with a median of 8 µg/L. Los Banos Creek flows into Mud Slough (North) downstream of the Highway 140 monitoring station and it has a diluting effect on Mud Slough with respect to selenium as measured at the Newman Land and Cattle Company station (O-1). Los Banos Creek receives its flow from the western portion of the North Grassland Area and from areas west of the study area. It receives little subsurface drainage. Selenium concentrations range from 0.4 to 3.7 µg/L with a median of 1 µg/L at the Los Banos Creek at Highway 140 station (O-3). Comparing selenium data at Los Banos Creek at Highway 140 to Mud Slough (North) at Highway 140 for data collected on the same day reveals that Mud Slough (North) at Highway 140 can have selenium concentrations from 5 to 30 times higher than those at Los Banos Creek.

Selenium data from the Mud Slough at Newman Land and Cattle Company monitoring station (O-1) shows the diluting effect of Los Banos Creek. Selenium at this site ranged from less than 1 to 26 µg/L with a median of 4.3 µg/L which is approximately half the median concentration found at Mud Slough at Highway 140. Comparing selenium concentrations from samples collected on the same day at Mud Slough at Highway 140 and at Newman Land and Cattle Company show that relative selenium concentrations can range from being essentially equal to two times higher at Highway 140. This dilution factor is dependent upon the relative flows in Los Banos Creek and Mud Slough (North) upstream of the confluence.

To identify possible trends in the selenium concentrations found in the water leaving the Grassland Area, three month continuous means were calculated and graphed for the two major outflow stations; Salt Slough at Lander Avenue (O-4) and Mud Slough at Highway 140 (O-2). The graphs in Figure 7 generally show a cyclic pattern with selenium concentrations at these two outflow stations increasing during the nonirrigation season (October to March) and decreasing during the irrigation season (April to September). This can be explained by the presence or absence of irrigation return flows (tailwater). During the nonirrigation season there is no tailwater being discharged to the Grassland Area drains so tile drainage makes up a larger proportion of the flow causing an increase in selenium concentrations. Surface runoff makes up a large proportion of the flow in the Grassland drains during the irrigation season and selenium concentrations decrease. The lowest selenium concentrations in the two drains are generally found at the end of the irrigation season.

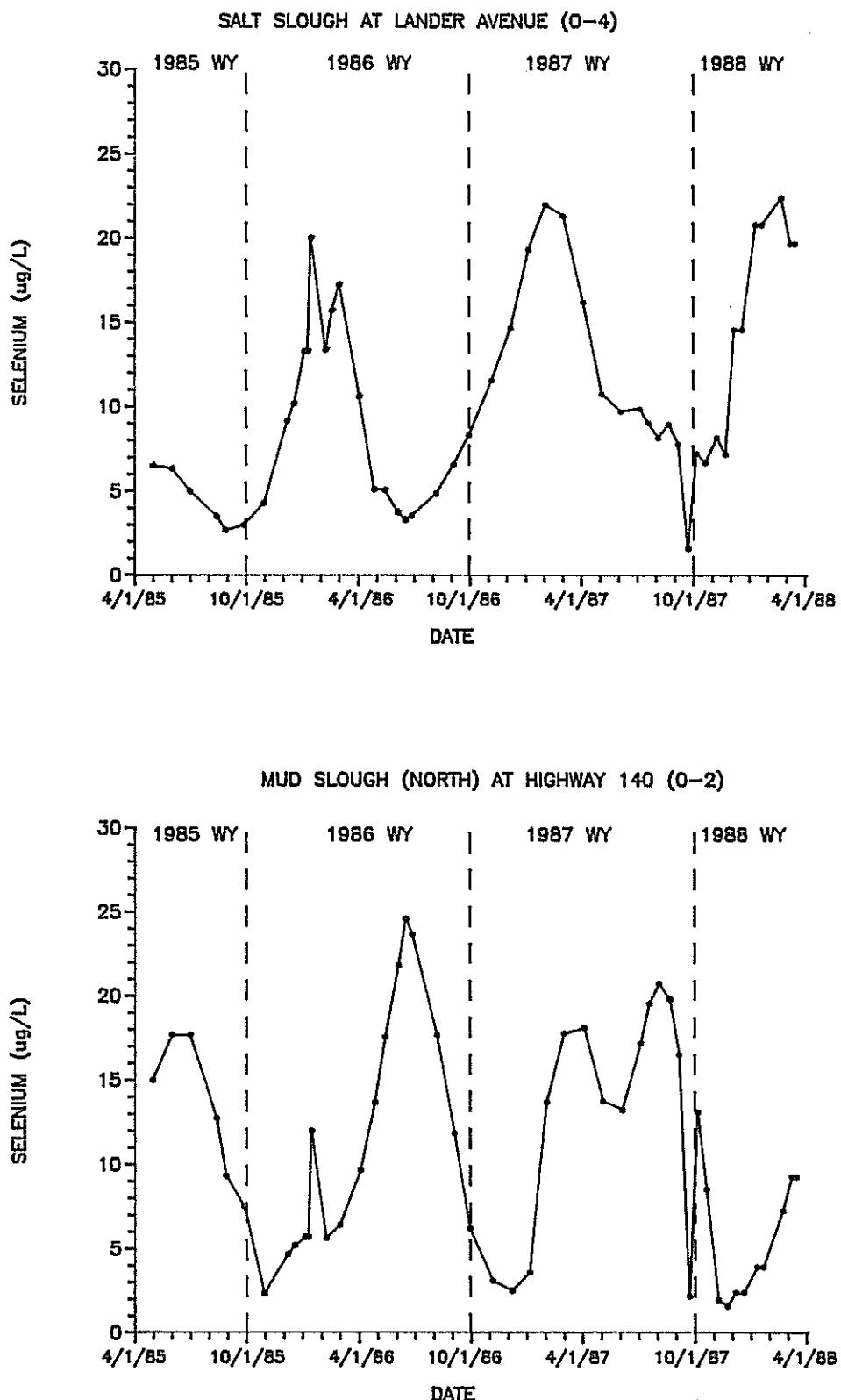


Figure 7 Three month continuous means of selenium concentrations at the two major outflow monitoring stations.

Molybdenum concentrations in the Salt Slough tributary outflow stations are all essentially the same. The median molybdenum concentrations at these four sites (O-4 to O-7) ranged from 6 to 8 µg/L. Salt Slough at Lander Avenue, which represents the water quality of Salt Slough before discharging to the San Joaquin River, had molybdenum concentrations ranging from 4 to 14 µg/L with a median of 7 µg/L.

For the Mud Slough (North) tributary outflow stations median molybdenum concentrations ranged from less than 5 µg/L at Los Banos Creek at Highway 140 to 9 µg/L at Mud Slough (North) at Highway 140. These median values may be somewhat misleading, because there are results for only 6 molybdenum samples from Los Banos Creek and for 36 molybdenum samples from Mud Slough (North) and on the days (in 1986) when molybdenum data is available for both sites, the molybdenum concentrations are essentially the same. There is generally a slight decrease in molybdenum concentrations at the Newman Land and Cattle Company site compared to those found upstream at Highway 140, suggesting that some dilution from Los Banos Creek with respect to molybdenum is occurring. Molybdenum concentrations at the Newman Land and Cattle Company station ranged from less than 5 to 14 µg/L with a median of 5 µg/L, but this data was limited to the year 1986.

Total recoverable median copper concentrations at the outflow monitoring stations ranged from 4 µg/L at Mud Slough (North) at the Newman Land and Cattle Company to 8 µg/L at Los Banos Creek at Highway 140 and Salt Slough at Wolfsen Road. Copper data is limited at most monitoring stations. Mud Slough at Highway 140 and Salt Slough at Lander Avenue have the most complete data records of all the outflow stations. Mud Slough at Highway 140 had total recoverable copper concentrations ranging from 1 to 16 µg/L with a median of 7 µg/L, while Salt Slough at Lander Avenue concentrations ranged from less than 1 to 25 µg/L with a median copper concentration of 6 µg/L. Therefore total recoverable copper concentrations in water leaving the Grassland Area are generally low, but may at times be above the criterion for the protection of freshwater aquatic life (Table 6).

The highest median total recoverable chromium concentrations of all the outflow monitoring stations occurred at City Ditch and the Santa Fe Canal - Mud Slough (South) Diversion (14 and 12 µg/L, respectively). The data record for chromium is the most complete at the Mud Slough at Highway 140 and the Salt Slough at Lander Avenue stations.. Total recoverable chromium concentrations at Mud Slough (North) at Highway 140 ranged from 1 to 18 µg/L with a median of 6 µg/L. Salt Slough at Lander Avenue had chromium values ranging from 1 to 33 µg/L with a median of 4 µg/L. Analysis for acid soluble hexavalent chromium (Cr +6) would be needed to evaluate chromium concentrations with respect to beneficial use.

The median total recoverable nickel concentrations for all the outflow stations ranged from 10 to 18 µg/L. Most of the sites had limited data, so the medians may be misleading, especially for Los Banos Creek at Highway 140 which had the highest median (18 µg/L) but only had six nickel samples analyzed throughout

the entire study period. Mud Slough at Highway 140 had nickel concentrations ranging from less than 5 to 40 µg/L with a median of 13 µg/L. Salt Slough at Lander Avenue had nickel values ranging from 5 to 26 µg/L with a median of 10 µg/L. None of these levels are a threat to beneficial use.

Total recoverable zinc concentrations were slightly elevated with median concentrations ranging from 10 µg/L at Mud Slough (North) at Highway 140 to 22 µg/L at City Ditch. Both of these stations have fairly complete data records. Salt Slough at Lander Avenue had total recoverable zinc concentrations ranging from 3 to 24 µg/L with a median value of 18 µg/L and Mud Slough at Hwy. 140 had concentrations ranging from 2 to 31 µg/L with a median of 10 µg/L, but data for these two sites is limited to samples collected in 1986. Any comparison of this data to inflow monitoring station data must take these limitations into account.

Mercury has not been detected at any of the outflow monitoring stations.

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APPENDIX A

Mineral Water Quality Data for Inflow Monitoring Stations Listed in Order by Map Index Number

| Map Index | RWCB Site I.D. | Site Name | Page |
|-----------|----------------|-----------------------------------|------|
| I-1 | MER556 | Firebaugh @ Russell Avenue | A-2 |
| I-2 | MER501 | Panoche Drain | A-5 |
| I-3 | MER552 | Mercy Springs Drain | A-8 |
| I-4 | MER506 | Agatha Drain | A-10 |
| I-5 | MER507 | Helm Canal | A-13 |
| I-6 | MER504 | Hamburg Drain | A-15 |
| I-7 | MER505 | Camp 13 Slough | A-18 |
| I-8 | MER502 | Charleston Drain | A-21 |
| I-9 | MER555 | Almond Drive Drain | A-24 |
| I-10 | MER509 | Rice Drain | A-26 |
| I-11 | MER521 | Boundary Drain | A-29 |
| I-12 | MER528 | Salt Slough Ditch @ Hereford Road | A-32 |
| I-13 | MER513 | Garzas Creek @ Hunt Road | A-35 |

MINERAL WATER QUALITY DATA

MAP INDEX 1-1.....MER556 FIREBAUGH DRAIN AT RUSSELL AVENUE

LOCATION Latitude 36 55'27", Longitude 120 39'11"
 In SW 1/4, SW 1/4, SW 1/4, Sec. 34, T.11S., R.12E.,
 E side of Russell Ave., 2.7 miles S of South Dos Palos.

| DATE | TIME | pH | EC (microhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total Alk | Hard. | TDS | Total Recoverable | |
|----------|------|------|---------------------|-----|------|------|-----|-----|-----|-----|-----|------|--------------|-------|------|-------------------|------|
| | | | | | | | | | | | | | | | | mg/L | mg/L |
| 05/02/85 | 0835 | 8.0 | 2600 | 2.4 | 250 | 693 | | | | | | | | | | | |
| 06/03/85 | 0940 | 2800 | 4.0 | 230 | 860 | | | | | | | | | | | | |
| 06/13/85 | 1130 | 7.8 | 2200 | 2.8 | 200 | 660 | | | | | | | | | | | |
| 07/02/85 | 0645 | 7.7 | 2400 | 3.2 | 220 | 730 | | | | | | | | | | | |
| 08/15/85 | 0715 | 2400 | 2.8 | 230 | 660 | | | | | | | | | | | | |
| 08/28/85 | 1600 | 7.8 | 2100 | 3.4 | 230 | 630 | | | | | | | | | | | |
| 09/28/85 | 0840 | 3100 | 4.6 | 350 | 830 | | | | | | | | | | | | |
| 10/31/85 | 0800 | 8.3 | 3300 | 5.2 | 400 | 1100 | | | | | | | | | | | |
| 12/07/85 | 0825 | 8.9 | 2100 | 3.1 | 190 | 500 | | | | | | | | | | | |
| 01/04/86 | 0810 | 8.6 | 2000 | 2.5 | 210 | 460 | | | | | | | | | | | |
| 01/14/86 | 1115 | 8.0 | 3200 | 5.7 | 380 | 890 | | | | | | | | | | | |
| 02/01/86 | 1540 | 8.2 | 2900 | 3.0 | 300 | 960 | 190 | 65 | 380 | 7.4 | 0 | 130 | 130 | 750 | 2100 | | |
| 03/01/86 | 0830 | 8.2 | 4300 | 7.0 | 490 | 1300 | 230 | 110 | 480 | 4.8 | 4 | 150 | 154 | 1100 | 3200 | | |
| 04/19/86 | 0640 | 3100 | 4.6 | 380 | 1200 | 190 | 75 | 460 | 4.9 | 0 | 120 | 120 | 790 | 2300 | | | |
| 04/27/86 | 0800 | 7.9 | 3300 | 4.7 | 360 | 1200 | 200 | 79 | 492 | 6.6 | 0 | 120 | 120 | 740 | 2500 | | |
| 05/13/86 | 0800 | 2700 | 3.5 | 250 | 910 | 125 | 57 | 325 | 4.8 | 0 | 110 | 110 | 575 | 1850 | | | |
| 06/04/86 | 0810 | 8.0 | 2200 | 2.8 | 200 | 660 | 120 | 45 | 310 | 5.6 | 0 | 110 | 110 | 460 | 1500 | | |
| 06/17/86 | 0730 | 1900 | 2.4 | 140 | 560 | 96 | 37 | 210 | 5.0 | 0 | 120 | 120 | 410 | 1300 | | | |
| 06/26/86 | 1550 | 8.8 | 2700 | 3.8 | 240 | 910 | 150 | 61 | 320 | 6.3 | 0 | 260 | 260 | 580 | 1900 | | |
| 08/05/86 | 0830 | 8.8 | 2200 | 3.2 | 230 | 600 | | | | | | | | | | | |
| 09/02/86 | 1600 | 2400 | 3.4 | 710 | | | | | | | | | | | | | |
| 09/28/86 | 0830 | 7.9 | 2600 | 4.8 | 280 | 900 | | | | | | | | | | | |
| 11/03/86 | 1140 | | | 3.4 | 270 | 630 | | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX I-1.....MER556 FIREBAUGH DRAIN AT RUSSELL AVENUE (cont.)

| DATE | TIME | pH | ·EC (microhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Alk | Total | TDS |
|----------|------|--------|----------------------|-----|-----|------|-------------------|-----|-----|-----|-----|------|------|-------|------|
| | | | | | | | Total Recoverable | | | | | | | | |
| 12/04/86 | 1215 | 7.9 | | 8.4 | 390 | 970 | 260 | 95 | 570 | 17 | 0 | 160 | 160 | 850 | 2900 |
| 01/03/87 | 0825 | 8.3 | 5500 | 6.3 | 340 | 1800 | | | | | | 0 | 130 | 150 | 130 |
| 01/30/87 | 1355 | 7.9 | 2700 | 3.3 | 260 | 720 | | | | | | | | | |
| 02/27/87 | 1410 | 8.1 | 3140 | 5.0 | 380 | | | | | | | | | | |
| 04/01/87 | 1345 | 8.1 | 3080 | 4.0 | 330 | | | | | | | | | | |
| 05/01/87 | 1525 | 8.5 | 2140 | 2.3 | 220 | | | | | | | | | | |
| 06/01/87 | 1600 | 7.6 | 2320 | 2.9 | 235 | 630 | | | | | | | | | |
| 07/01/87 | 0815 | | 2600 | 3.4 | 280 | | | | | | | | | | |
| 07/31/87 | 0900 | 7.8 | 2100 | 2.6 | 200 | 500 | | | | | | | | | 140 |
| 09/01/87 | 0920 | | 2310 | 2.9 | 220 | 540 | | | | | | | | | 160 |
| 10/01/87 | 0945 | 7.6 | 2760 | 3.3 | 300 | 660 | | | | | | | | | 130 |
| 11/03/87 | 1510 | 7.8 | 3600 | 3.8 | 420 | 1100 | | | | | | 0 | 170 | 170 | |
| 12/01/87 | 1600 | 8.6 | 7510 | 9.2 | 840 | 2500 | | | | | | 6 | 130 | 136 | |
| 01/05/88 | 1050 | 6.9 | 6350 | 6.1 | 750 | 1500 | | | | | | 0 | 380 | 380 | |
| 01/27/88 | 1440 | 7.9 | 3100 | 3.3 | 270 | 780 | | | | | | 0 | 140 | 140 | |
| 03/09/88 | 1530 | | 4500 | 7.0 | 450 | 1500 | | | | | | <1 | 160 | 160 | |
| 03/30/88 | 1600 | 8.0 | 2700 | 3.0 | 270 | 740 | | | | | | <1 | 130 | 130 | |
| <hr/> | | | | | | | | | | | | | | | |
| 85 WY* | | MIN | 2100 | 2.4 | 200 | 630 | | | | | | | | | |
| | | MED | 2400 | 3.2 | 230 | 693 | | | | | | | | | |
| | | MAX | 3100 | 4.6 | 350 | 860 | | | | | | | | | |
| | | # DATA | 7 | 7 | 7 | 7 | | | | | | | | | |
| <hr/> | | | | | | | | | | | | | | | |
| 86 WY* | | MIN | 1900 | 2.4 | 40 | 460 | 96 | 37 | 210 | 4.8 | 110 | 110 | 1300 | 1300 | |
| | | MED | 2700 | 3.5 | 250 | 900 | 170 | 63 | 352 | 5.3 | 120 | 120 | 2000 | 2000 | |
| | | MAX | 4300 | 7 | 490 | 1300 | 230 | 110 | 492 | 7.4 | 260 | 260 | 3200 | 3200 | |
| | | # DATA | 15 | 15 | 15 | 15 | 8 | 8 | 8 | 8 | 8 | 8 | 12 | 8 | 8 |

MINERAL WATER QUALITY DATA

MAP INDEX I-1.....MERS556 FIREBAUGH DRAIN AT RUSSELL AVENUE (cont.)

| DATE | EC (umhos/cm) | B | CL | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total Alk | TDS |
|--------|------------------|------|-----|-----|------|-----|-----|-----|-----|------|--------------|------|
| | | | | | | | | | | | | |
| 87 WY* | MIN | 2100 | 2.3 | 200 | 500 | 260 | 95 | 570 | 17 | 130 | 120 | 2900 |
| | MED | 2600 | 3.4 | 270 | 630 | 260 | 95 | 570 | 17 | 145 | 145 | 2900 |
| | MAX | 5500 | 8.4 | 390 | 1800 | 260 | 95 | 570 | 17 | 160 | 160 | 2900 |
| | # DATA | 9 | 11 | 11 | 7 | 1 | 1 | 1 | 1 | 2 | 6 | 1 |
| 88 WY* | MIN | 2700 | 0.3 | 110 | 98 | | | | | 0 | 96 | 96 |
| | MED | 3600 | 3.8 | 420 | 1100 | | | | | <1 | 150 | 140 |
| | MAX | 7510 | 9.2 | 840 | 2500 | | | | | 6 | 380 | 380 |
| | # DATA | 7 | 7 | 7 | 7 | | | | | 6 | 6 | 7 |
| TOTAL | MIN | 1900 | 0.3 | 40 | 98 | 96 | 37 | 210 | 4.8 | 0 | 96 | 96 |
| | MED | 2700 | 3.4 | 265 | 755 | 190 | 65 | 380 | 5.6 | 0 | 130 | 140 |
| | MAX | 7510 | 9.2 | 840 | 2500 | 260 | 110 | 570 | 17 | 6 | 380 | 380 |
| | # DATA | 38 | 40 | 40 | 36 | 9 | 9 | 9 | 9 | 16 | 16 | 25 |
| | | | | | | | | | | | | 9 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX 1-2.....MERS01 PANOCHE DRAIN AT O'BANION GAUGE STATION

LOCATIONLatitude 36 55'27", Longitude 120 41'19"
 In SW 1/4, SW 1/4, sec. 32, T.11S., R.12E., located
 0.5 miles S of CCID Main Canal, 1.9 miles W of Russell Rd.;
 5.5 miles SW of Dos Palos (3.4 SW of South Dos Palos).

| DATE | TIME | pH | EC | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | HDNS | TDS | Total Recoverable | |
|----------|------|-----|------|-----|-----|-----------------|-----|----|-----|-----|-----------------|------------------|-------|-----|------|------|-------------------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L |
| 05/02/85 | 1115 | 8.0 | 3900 | 6.9 | 500 | 1260 | | | | | | | | | | | | |
| 06/03/85 | 1050 | | 3500 | 6.3 | 490 | 960 | | | | | | | | | | | | |
| 06/13/85 | 1300 | 7.8 | 3200 | 8.0 | 430 | 840 | | | | | | | | | | | | |
| 07/02/85 | 0755 | 7.7 | 3200 | 5.6 | 390 | 790 | | | | | | | | | | | | |
| 08/15/85 | 0830 | | 2600 | 4.8 | 310 | 610 | | | | | | | | | | | | |
| 08/28/85 | 1320 | 8.0 | 2800 | 5.1 | 340 | 770 | | | | | | | | | | | | |
| 09/28/85 | 1005 | | 3000 | 5.8 | 410 | 700 | | | | | | | | | | | | |
| 10/31/85 | 0920 | 8.3 | 4600 | 8.2 | 610 | 1320 | | | | | | | | | | | | |
| 04/19/86 | 0730 | | 3700 | 7.2 | 530 | 1200 | 270 | 73 | 520 | 4.9 | 0 | 160 | | 160 | | 1000 | 2800 | |
| 04/27/86 | 0915 | 7.7 | 3500 | 7.0 | 520 | 1200 | 256 | 68 | 484 | 4.4 | 0 | 160 | | 160 | | 940 | 2600 | |
| 05/13/86 | 0845 | | 3700 | 6.0 | 470 | 1100 | 200 | 66 | 420 | 3.5 | 16 | 130 | | 146 | | 820 | 2500 | |
| 06/04/86 | 0930 | 7.9 | 3500 | 6.7 | 450 | 1000 | 260 | 68 | 510 | 5.7 | 0 | 150 | | 150 | | 830 | 2500 | |
| 06/17/86 | 0810 | | 3100 | 5.4 | 380 | 740 | 180 | 54 | 320 | 5.5 | 0 | 150 | | 150 | | 770 | 1800 | |
| 06/26/86 | 1710 | 8.0 | 3400 | 6.4 | 440 | 920 | 280 | 70 | 380 | 4.8 | 0 | 240 | | 240 | | 860 | 2500 | |
| 08/05/86 | 0935 | 8.5 | 3200 | 5.7 | 130 | 300 | | | | | | | | | | 150 | | |
| 09/02/86 | 1650 | | 3000 | 5.1 | 330 | 780 | | | | | | | | | | 160 | | |
| 09/28/86 | 0945 | 8.7 | 4200 | 9.0 | 560 | 970 | | | | | | | | | | 180 | | |
| 11/03/86 | 1055 | | | | | | | | | | | | | | | 130 | | |
| 12/04/86 | 1030 | 7.8 | | | | | | | | | | | | | | 140 | | |
| 02/27/87 | 1420 | 8.0 | | | | | | | | | | | | | | 850 | | |
| 04/01/87 | 1310 | 7.9 | | | | | | | | | | | | | | | 2600 | |
| 05/01/87 | 1540 | 8.5 | | | | | | | | | | | | | | | | |
| 06/01/87 | 1615 | 7.7 | | | | | | | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-2.....MER501 PANOCHE DRAIN AT O'BANION GAUGE STATION (cont.)

| DATE | TIME | pH | EC (microhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | Alk | HDNS | TDS |
|-------------------|--------|-----|---------------------|-----|-----|------|-----|----|-----|-----|-----|------|-------|-----|------|------|
| Total Recoverable | | | | | | | | | | | | | | | | |
| .mg/L | | | | | | | | | | | | | | | | |
| 07/01/87 | 0830 | | 3400 | 5.8 | 440 | | | | | | | | | | | |
| 07/31/87 | 0915 | 7.7 | 2700 | 4.1 | 300 | 560 | | | | | | | 150 | | | |
| 09/01/87 | 0930 | | 3120 | 5.5 | 360 | 760 | | | | | | | 180 | | | |
| 10/01/87 | 1000 | 7.8 | 4750 | 8.7 | 670 | 1150 | | | | | | | 200 | | | |
| 11/03/87 | 1525 | 8.2 | 4550 | 8.8 | 680 | 1500 | | | | | | | 0 | 190 | | |
| 12/01/87 | 1540 | 7.9 | 3460 | 5.2 | 430 | 820 | | | | | | | 0 | 140 | 140 | |
| 01/27/88 | 1500 | 8.0 | 5300 | 8.5 | 600 | 1300 | | | | | | | 0 | 190 | 190 | |
| 03/09/88 | 1540 | | 4200 | 7.1 | 500 | 1000 | | | | | | | <1 | 170 | 170 | |
| 03/30/88 | 1525 | 8.1 | 3650 | 6.4 | 430 | 890 | | | | | | | <1 | 160 | 160 | |
| # DATA | | | | | | | | | | | | | | | | |
| 85WY* | MIN | | 3000 | 5.1 | 130 | 300 | 180 | 54 | 320 | 0 | | | 130 | 146 | | 1800 |
| | MED | | 3500 | 6.5 | 460 | 985 | 258 | 68 | 452 | 4.8 | 0 | | 155 | 160 | | 2500 |
| | MAX | | 4600 | 9.0 | 610 | 1320 | 280 | 73 | 520 | 5.7 | 16 | | 240 | 240 | | 2800 |
| | # DATA | | 10 | 10 | 10 | 10 | 6 | 6 | 6 | 7 | 6 | | 6 | 9 | | 6 |
| 86WY* | MIN | | 2700 | 4.1 | 300 | 560 | 200 | 51 | 480 | 16 | 0 | | 140 | 130 | | 2600 |
| | MED | | 3400 | 5.8 | 390 | 800 | 200 | 51 | 480 | 16 | 0 | | 140 | 145 | | 2600 |
| | MAX | | 4310 | 9.4 | 580 | 900 | 200 | 51 | 480 | 16 | <1 | | 140 | 180 | | 2600 |
| | # DATA | | 7 | 9 | 9 | 5 | 1 | 1 | 1 | 1 | 5 | | 1 | 4 | | 1 |
| 87WY* | MIN | | 3460 | 4.9 | 220 | 560 | | | | | | | | | | |
| | MED | | 4375 | 7.8 | 550 | 1075 | | | | | | | | | | |
| | MAX | | 5300 | 8.8 | 680 | 1500 | | | | | | | | | | |
| | # DATA | | 6 | 6 | 6 | 6 | | | | | | | | | | |
| 88WY* | MIN | | 2600 | 4.8 | 310 | 610 | | | | | | | | | | |
| | MED | | 3200 | 5.8 | 410 | 790 | | | | | | | | | | |
| | MAX | | 3900 | 8.0 | 500 | 1260 | | | | | | | | | | |
| | # DATA | | 7 | 7 | 7 | 7 | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-2.....MER501 PANOCHE DRAIN AT O'BANION GAUGE STATION (cont.)

| DATE | | | | | | | | | | | | | |
|------|-------------------|---|----|-----------------|----|----|----|---|-----------------|------------------|--------------|-----|--|
| | EC (michos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | TDS | |
| | | | | | | | | | | | | | |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX I-3.....MERR552 MERCY SPRINGS DRAIN (OUTLET) NEAR PANOCHE DRAIN

LOCATION Latitude 36 56'01", Longitude 120 42'05",
 In SE 1/4, SE 1/4, NW 1/4, Sec. 31, T.11S., R.12E.,
 S of Firebaugh drain, 2.6 miles W of Russell Ave,
 2.8 miles S of South Dos Palos.

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS | Total Recoverable | |
|----------|------|-----|------------------|-----|-----|-----------------|-----|-----|-----|-----|-----------------|------------------|-------|------|-------|------|-------------------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L |
| 04/03/86 | | | | | | | | | | | | | | | | | | |
| 04/19/86 | 0720 | 8.0 | 4500 | 11 | 540 | 1800 | 290 | 120 | 700 | 5.0 | 0 | 120 | 1200 | 1200 | 1200 | 3600 | | |
| 04/27/86 | 0940 | 7.8 | 4700 | 9.9 | 750 | 1700 | 317 | 122 | 694 | 6.3 | 0 | 200 | 200 | 200 | 1340 | 3500 | | |
| 05/13/86 | 0910 | 8.3 | 3700 | 6.1 | 460 | 1000 | 200 | 66 | 450 | 3.6 | 0 | 150 | 150 | 150 | 880 | 2500 | | |
| 06/04/86 | 0950 | 8.0 | 2800 | 6.8 | 310 | 880 | 150 | 62 | 430 | 6.9 | 0 | 170 | 170 | 170 | 600 | 1900 | | |
| 06/17/86 | 0830 | | | | | | | | | | | | | | | | | |
| A-8 | | | | | | | | | | | | | | | | | | |
| 06/26/86 | 1730 | 7.8 | 5000 | 11 | 680 | 1600 | 240 | 110 | 340 | 4.9 | 0 | 190 | 190 | 190 | 760 | 1900 | | |
| 08/05/86 | 0950 | 8.3 | 2700 | 6.2 | 300 | 800 | | | | | | | | | | | | |
| 09/02/86 | 1700 | | | | | | | | | | | | | | | | | |
| 09/28/86 | 1005 | 8.4 | 2900 | 7.2 | 360 | 780 | | | | | | | | | | | | |
| 11/03/86 | 1040 | | | | | | | | | | | | | | | | | |
| 12/04/86 | 1045 | 8.0 | | | | | | | | | | | | | | | | |
| 01/30/87 | 1405 | 8.0 | | | | | | | | | | | | | | | | |
| 02/27/87 | 1440 | 7.8 | | | | | | | | | | | | | | | | |
| 04/01/87 | 1325 | 8.2 | | | | | | | | | | | | | | | | |
| 05/01/87 | 1555 | 8.7 | | | | | | | | | | | | | | | | |
| 06/01/87 | 1625 | 8.2 | | | | | | | | | | | | | | | | |
| 07/01/87 | 0845 | | | | | | | | | | | | | | | | | |
| 07/31/87 | 0930 | 7.7 | | | | | | | | | | | | | | | | |
| 09/01/87 | 0945 | | | | | | | | | | | | | | | | | |
| 10/01/87 | 1015 | 8.2 | | | | | | | | | | | | | | | | |
| 11/03/87 | 1540 | 8.7 | | | | | | | | | | | | | | | | |
| 12/01/87 | 1610 | 8.4 | | | | | | | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-3.....MER552 MERCY SPRINGS DRAIN (OUTLET) NEAR PANOCHE DRAIN (cont.)

| DATE | TIME | pH | EC (micros/cm) | mg/L | | | | | | Total Recoverable | Hard. | TDS | |
|----------|--------|-----|-------------------|------|------|------|-----|-----|-----|----------------------|-------|-----|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 01/05/88 | 1100 | 8.4 | 7150 | 21 | 650 | 2200 | | | | 0 | 180 | 180 | |
| 01/27/88 | 1520 | 8.5 | 9900 | 27 | 1000 | 3500 | | | | 0 | 210 | 210 | |
| 03/09/88 | 1555 | | 5750 | 14 | 590 | 1900 | | | | 4 | 190 | 194 | |
| 03/30/88 | 1535 | 8.2 | 2150 | 4.9 | 220 | 560 | | | | <1 | 130 | 130 | |
| <hr/> | | | | | | | | | | | | | |
| 86 WY* | MIN | | 1140 | 1.8 | 120 | 210 | 150 | 62 | 340 | 3.6 | 120 | 120 | 1900 |
| | MED | | 3300 | 7.2 | 360 | 1000 | 220 | 92 | 440 | 5 | 180 | 180 | 3000 |
| | MAX | | 5000 | 11 | 750 | 1800 | 317 | 122 | 700 | 6.9 | 200 | 200 | 3700 |
| | # DATA | | 9 | 9 | 9 | 9 | 6 | 6 | 6 | 6 | 9 | 9 | 6 |
| <hr/> | | | | | | | | | | | | | |
| 87 WY* | MIN | | 2180 | 3.7 | 260 | 480 | 300 | 95 | 500 | 18 | 150 | 140 | 2700 |
| | MED | | 3125 | 7 | 302 | 800 | 300 | 95 | 500 | 18 | 165 | 180 | 2700 |
| | MAX | | 8070 | 19 | 1180 | 1200 | 300 | 95 | 500 | 18 | 180 | 190 | 2700 |
| | # DATA | | 8 | 10 | 10 | 6 | 1 | 1 | 1 | 1 | 2 | 5 | 1 |
| <hr/> | | | | | | | | | | | | | |
| 88 WY* | MIN | | 2150 | 0.3 | 110 | 98 | | | | 0 | 96 | 96 | |
| | MED | | 7150 | 19 | 650 | 2200 | | | | 0 | 190 | 194 | |
| | MAX | | 9900 | 27 | 1000 | 3500 | | | | 4 | 220 | 220 | |
| | # DATA | | 7 | 7 | 7 | 7 | | | | 6 | 6 | 7 | |
| <hr/> | | | | | | | | | | | | | |
| TOTAL | MIN | | 1140 | 0.3 | 110 | 98 | 150 | 62 | 340 | 3.6 | 0 | 96 | 96 |
| | MED | | 3750 | 7.4 | 355 | 1100 | 240 | 95 | 450 | 5 | 0 | 185 | 190 |
| | MAX | | 9900 | 27 | 1180 | 3500 | 317 | 122 | 700 | 18 | 4 | 220 | 220 |
| | # DATA | | 24 | 26 | 26 | 22 | 7 | 7 | 7 | 7 | 14 | 14 | 21 |
| | | | | | | | | | | | 7 | | |

* Water year: extending from 1 October of one year to 1 October of the following year

MINERAL WATER QUALITY DATA

MAP INDEX I-4.....MER506 AGATHA CANAL AT HELM CANAL

LOCATION Latitude 36 56'04", Longitude 120 41'06"
 In NE 1/4, SE 1/4, NW 1/4, Sec. 31, T.11S., R.12E.,
 150 ft. N of Helm Canal, 2.6 miles W of Russell Ave.,
 3.4 miles SW of South Dos Palos.

| DATE | TIME | pH | EC (umhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|------|-----|------------------|-------------------|-----|------|----|----|----|-------|-----|-------|-----|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 05/02/85 | 1030 | 8.1 | 3700 | 6.3 | 420 | 1000 | | | | | | | |
| 06/03/85 | 1000 | | 2200 | 4.6 | 210 | 570 | | | | | | | |
| 07/02/85 | 0720 | 7.7 | 3200 | 5.8 | 390 | 880 | | | | | | | |
| 08/15/85 | 0750 | | 2500 | 2.7 | 300 | 610 | | | | | | | |
| 08/28/85 | 1520 | 7.8 | 2700 | 5.3 | 330 | 790 | | | | | | | |
| 09/28/85 | 0935 | | 660 | 0.45 | 91 | 75 | | | | | | | |
| 10/31/85 | 0825 | 8.5 | 1120 | 1.6 | 130 | 376 | | | | | | | |
| 12/07/85 | 1100 | 8.3 | 4200 | 6.8 | 550 | 1300 | | | | | | | |
| 01/14/86 | 1155 | 8.0 | 5200 | 9.5 | 630 | 1900 | | | | | | | |
| 03/02/86 | 0920 | 8.0 | 1200 | 1.4 | 110 | 350 | | | | | | | |
| 04/27/86 | 0830 | 7.9 | 3400 | 6.4 | 460 | 900 | | | | | | | |
| 06/04/86 | 0845 | 7.8 | 3200 | 6.2 | 420 | 1100 | | | | | | | |
| 06/26/86 | 1630 | 8.0 | 3500 | 5.1 | 380 | 900 | | | | | | | |
| 08/05/86 | 0900 | 8.7 | 3400 | 6.6 | 420 | 970 | | | | | | | |
| 09/02/86 | 1615 | | 2500 | 4.3 | 290 | 650 | | | | | | | |
| 09/28/86 | 0920 | 8.2 | 360 | 0.34 | 36 | 52 | | | | | | | |
| 11/03/86 | 1125 | | | 4.0 | 240 | 730 | | | | | | | |
| 01/03/87 | 0845 | 8.3 | 3700 | 6.1 | 410 | 1000 | | | | | | | |
| 02/27/87 | 1345 | 8.1 | 4010 | 8.5 | 590 | | | | | | | | |
| 04/01/87 | 1400 | 8.0 | 4800 | 11 | 630 | | | | | | | | |
| 05/01/87 | 1500 | 8.4 | 3070 | 5.3 | 380 | | | | | | | | |
| 06/01/87 | 1540 | 7.7 | 3210 | 5.6 | 420 | 900 | | | | | | | |
| 07/01/87 | 0750 | | 3400 | 6.0 | 420 | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-4.....MER506 AGATHA CANAL AT HELM CANAL (cont.)

| DATE | TIME | PH | EC (microhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Alk | Hard. | TDS | Total |
|----------|--------|-----|---------------------|------|-------|-------|----|----|----|---|-----|------|-----|-------|-----|-------------------|
| | | | | | | | | | | | | | | | | mg/L |
| | | | | | | | | | | | | | | | | Total Recoverable |
| 07/31/87 | 0835 | 7.8 | 2900 | 5.3 | 300 | 600 | | | | | | | | | | 160 |
| 09/01/87 | 0855 | | 3000 | 5.0 | 360 | 760 | | | | | | | | | | 190 |
| 10/01/87 | 0920 | 8.0 | 786 | 0.40 | 120 | 66 | | | | | | | | | | 88 |
| 11/03/87 | 1450 | 7.8 | 3650 | 5.6 | 480 | 1000 | | | | | | | | | | 0 |
| 01/27/88 | 1410 | 8.5 | 8100 | 20 | 830 | 2600 | | | | | | | | | | 170 |
| 03/09/88 | 1505 | | 5250 | 13 | 530 | 1800 | | | | | | | | | | 176 |
| 03/30/88 | 1505 | 8.0 | 3450 | 5.5 | 380 | 860 | | | | | | | | | | 190 |
| | | | | | | | | | | | | | | | | 190 |
| 85 WY* | MIN | | 660 | 0.45 | 91 | 75 | | | | | | | | | | 160 |
| | MED | | 2600 | 4.9 | 315 | 700 | | | | | | | | | | 160 |
| | MAX | | 3700 | 6.3 | 420 | 1000 | | | | | | | | | | 160 |
| | # DATA | | 6 | 6 | 6 | 6 | | | | | | | | | | 160 |
| 86 WY* | MIN | | 360 | 0.34 | 36 | 52 | | | | | | | | | | 160 |
| | MED | | 3300 | 5.6 | 400 | 900 | | | | | | | | | | 160 |
| | MAX | | 5200 | 9.5 | 630 | 1900 | | | | | | | | | | 160 |
| | # DATA | | 10 | 10 | 10 | 10 | | | | | | | | | | 160 |
| 87 WY* | MIN | | 2900 | 4 | 240 | 600 | | | | | | | | | | 130 |
| | MED | | 3305 | 5.6 | 410 | 760.0 | | | | | | | | | | 150 |
| | MAX | | 4800 | 11 | 630.0 | 1000 | | | | | | | | | | 190 |
| | # DATA | | 8 | 9 | 9 | 5 | | | | | | | | | | 190 |
| 88 WY* | MIN | | 786 | 0.4 | 120 | 66 | | | | | | | | | | 88 |
| | MED | | 3650 | 6.4 | 480 | 1000 | | | | | | | | | | 88 |
| | MAX | | 8100 | 20 | 830 | 2600 | | | | | | | | | | 88 |
| | # DATA | | 5 | 5 | 5 | 5 | | | | | | | | | | 88 |

MINERAL WATER QUALITY DATA

MAP INDEX 1-4.....MER506 AGATHA CANAL AT HELM CANAL (cont.)

| DATE | EC (micros/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | TDS |
|-------------------|-------------------|------|------|-----------------|------|------|------|------|-----------------|------------------|--------------|------|
| | | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L |
| Total Recoverable | | | | | | | | | | | | |
| TOTAL | MIN | 360 | 0.34 | 36 | 52 | 58 | 28 | 140 | 3 | 0 | 58 | 58 |
| | MED | 3210 | 5.6 | 400 | 885 | 153 | 48 | 309 | 4 | <1 | 165 | 150 |
| | MAX | 8100 | 20 | 830 | 2600 | 249 | 69 | 478 | 5 | 6 | 190 | 190 |
| | # DATA | 29 | 30 | 30 | 26 | 2 | 2 | 2 | 2 | 6 | 6 | 17 |
| | | | | | | | | | | | | 2 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX 1-5MERR507 HELM CANAL NEAR AGATHA CANAL

LOCATIONLatitude 36 56'04", Longitude 120 41'06"
 In NE 1/4, SE 1/4, NW 1/4, Sec. 31, T.11S., R. 12E.,
 0.1 miles W of Agatha Canal, 2.7 miles W of Russell Ave.;
 4.5 miles W of Dos Palos.

| DATE | TIME | pH | EC (umhos/cm) | mg/L | | | | | | Total Recoverable | | | |
|----------|------|--------|------------------|------|-----|------|----|----|----|-------------------|-----|------|-------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total |
| 05/02/85 | 1040 | 8.0 | 3900 | 6.7 | 430 | 1000 | | | | | | | |
| 06/03/85 | 1030 | | 3500 | 6.8 | 470 | 940 | | | | | | | |
| 07/02/85 | 0733 | 7.7 | 3200 | 7.1 | 410 | 840 | | | | | | | |
| 08/15/85 | 0755 | | 2600 | 4.3 | 300 | 640 | | | | | | | |
| 08/28/85 | 1535 | 7.8 | 2600 | 5.1 | 340 | 760 | | | | | | | |
| 09/28/85 | 0930 | | 640 | 0.40 | 85 | 66 | | | | | | | |
| 10/31/85 | 0830 | 8.6 | 550 | 0.25 | 65 | <2 | | | | | | | |
| 12/07/85 | 1110 | 8.8 | 840 | 0.73 | 97 | 130 | | | | | | | |
| 03/02/86 | 0900 | 8.9 | 80 | 0.13 | 6 | 5 | | | | | | | |
| 04/27/86 | 0845 | 8.5 | 100 | 0.05 | 1.9 | 3.5 | | | | | | | |
| 06/04/86 | 0900 | 8.7 | 1000 | 1.7 | 129 | 270 | | | | | | | |
| 06/26/86 | 1640 | 8.0 | 3400 | 5.9 | 420 | 900 | | | | | | | |
| 08/05/86 | 0855 | 8.7 | 3600 | 6.7 | 460 | 1000 | | | | | | | |
| 09/02/86 | 1620 | | 3000 | 5.4 | 340 | 880 | | | | | | | |
| 09/28/86 | 0905 | 8.3 | 360 | 0.34 | 37 | 40 | | | | | | | |
| | | | | | | | | | | | | | |
| 85 W* | | MIN | 640 | 0.4 | 85 | 66 | | | | | | | |
| | | MED | 2900 | 5.9 | 375 | 800 | | | | | | | |
| | | MAX | 3900 | 7.1 | 470 | 1000 | | | | | | | |
| | | # DATA | 6 | 6 | 6 | 6 | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-5.....MERS07 HELM CANAL NEAR AGATHA CANAL (cont.)

| DATE | EC (umhos/cm) | B | Cl | S04 | Ca | Mg | Na | K | C03 | HCO3 | Alk | Total | TDS |
|--------|------------------|-------------------------------------|------|------|------|----|-----|-----|-----|------|-----|-------|-----|
| | | Total Recoverablemg/L..... | | | | | | | | | | | |
| 86 WY* | | | | | | | | | | | | | |
| | MIN | 80 | 0.05 | 1.9 | <2 | 5 | 2 | 4 | 1 | 0 | 24 | 24 | 47 |
| | MED | 840 | 0.73 | 97 | 130 | 6 | 2.5 | 5.5 | 1.5 | 0 | 44 | 68 | 63 |
| | MAX | 3600 | 6.7 | 460 | 1000 | 6 | 3 | 7 | 2 | 0 | 64 | 180 | 79 |
| | # DATA | 9 | 9 | 9 | 9 | 2 | 2 | 2 | 2 | 2 | 2 | 7 | 2 |
| | TOTAL | MIN | 80 | 0.05 | 1.9 | <2 | 5 | 2 | 4 | 1 | 0 | 24 | 24 |
| | MED | 2600 | 4.3 | 300 | 640 | 6 | 2.5 | 5.5 | 1.5 | 0 | 44 | 68 | 63 |
| | MAX | 3900 | 7.1 | 470 | 1000 | 6 | 3 | 7 | 2 | 0 | 64 | 180 | 79 |
| | # DATA | 15 | 15 | 15 | 15 | 2 | 2 | 2 | 2 | 2 | 2 | 7 | 2 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX 1-6.....MER504 HAMBURG DRAIN NEAR CAMP 13 SLOUGH
 LOCATIONLatitude 36 56'32", Longitude 120 45'23"
 In SE 1/4, SE 1/4, SW 1/4, sec. 27, T 11S., R 11E.,
 50 ft. S of CCID Main Canal, 9.2 miles S-SE of Los Banos,
 6.7 miles W-SW of South Dos Palos.

| LOCATION | Latitude 36 56'32", Longitude 120 45'23" | | | | | | | | | | |
|----------|--|------|-----------------------|-------------------|------|-----------------|----|----|----|------------------|------|
| | In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E., 50 ft. S of CCID Main Canal, 9.2 miles S-SE of Los Banos, 6.7 miles W-SW of South Dos Palos. | | | | | | | | | | |
| DATE | TIME | pH | EC (μ hos/cm) | Total Recoverable | | | | | | Total | TDS |
| | | | | B | Cl | SO ₄ | Ca | Mg | Na | K | |
| | | | | | | | | | | HCO ₃ | Alk |
| | | | | | | | | | | mg/L | mg/L |
| 05/02/85 | 0850 | 7.9 | 4900 | 6 | 630 | 1400 | | | | | |
| 06/03/85 | 0950 | 7.7 | 2800 | 3 | 420 | 850 | | | | | |
| 07/02/85 | 0650 | 7.7 | 3200 | 3 | 380 | 900 | | | | | |
| 08/15/85 | 0725 | | 3500 | 4 | 450 | 900 | | | | | |
| 08/28/85 | 1610 | 8.1 | 3200 | 5 | 460 | 960 | | | | | |
| 09/28/85 | 0830 | | 2300 | 2 | 150 | 850 | | | | | |
| 10/31/85 | 0750 | 8.6 | 2000 | 1 | 110 | 1060 | | | | | |
| 12/07/85 | 0805 | 8.4 | 4300 | 5 | 520 | 1600 | | | | | |
| 01/04/86 | 0820 | 8.3 | 3900 | 6.4 | 490 | 1000 | | | | | |
| 01/14/86 | 1105 | 8.1 | 3400 | 3.0 | 390 | 1000 | | | | | |
| 02/01/86 | 1555 | 8.3 | 2800 | 3.2 | 230 | 860 | | | | | |
| 03/02/86 | 0840 | 8.4 | 3100 | 3.2 | 360 | 690 | | | | | |
| 04/19/86 | 0650 | 4150 | 6.1 | 570 | 1300 | 390 | | | | | |
| 04/27/86 | 0815 | 7.8 | 3500 | 4.8 | 480 | 1200 | | | | | |
| 05/13/86 | 0810 | | 3500 | 4.0 | 400 | 1100 | | | | | |
| 06/04/86 | 0825 | 8.0 | 2700 | 3.2 | 350 | 800 | | | | | |
| 06/17/86 | 0745 | | 3150 | 3.1 | 400 | 935 | | | | | |
| 06/26/86 | 1600 | 8.2 | 3100 | 4.2 | 420 | 940 | | | | | |
| 08/05/86 | 0835 | 8.8 | 2800 | 3.9 | 360 | 830 | | | | | |
| 09/02/86 | 1555 | | 3250 | 4.4 | 420 | 990 | | | | | |
| 09/28/86 | 0840 | 8.5 | 3300 | 5.5 | 270 | 1700 | | | | | |
| 11/03/86 | 1135 | | | 3.6 | 370 | 900 | | | | | |
| 12/04/86 | 1200 | 8.1 | | 4.1 | 450 | 970 | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-6.....MERR504 HAMBURG DRAIN NEAR CAMP 13 SLOUGH (cont.)

| DATE | TIME | pH | EC (micros/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | TDS |
|-------------------|------|-----|-------------------|-----|-----|-----------------|-----|----|-----|----|-----------------|------------------|-------|-----|------|
| Total Recoverable | | | | | | | | | | | | | | | |
| 01/03/87 | 0810 | 8.1 | 3700 | 3.9 | 310 | 1000 | | | | | | | | | 110 |
| 02/27/87 | 1325 | 7.8 | 3700 | 4.4 | 530 | | | | | | | | | | |
| 04/01/87 | 1425 | 8.4 | 3390 | 3.5 | 390 | | | | | | | | | | |
| 05/01/87 | 1430 | 8.6 | 2900 | 3.0 | 400 | | | | | | | | | | |
| 06/01/87 | 1525 | 8.0 | 3180 | 3.6 | 445 | 950 | | | | | | | | | |
| 07/01/87 | 0725 | | 3300 | 3.8 | 440 | | | | | | | | | | |
| 07/31/87 | 0815 | 7.9 | 3300 | 3.2 | 340 | 740 | | | | | | | | | |
| 09/01/87 | 0835 | | 3530 | 3.9 | 440 | 880 | | | | | | | | | |
| 10/01/87 | 0910 | 7.9 | 3650 | 4.4 | 480 | 900 | | | | | | | | | |
| 01/27/88 | 1355 | 8.1 | 3500 | 3.1 | 410 | 860 | | | | | | | | | |
| 03/09/88 | 1450 | | 4400 | 5.1 | 530 | 1300 | | | | | | | | | |
| 03/30/88 | 1445 | 8.0 | 4850 | 7.4 | 580 | 1400 | | | | | | | | | |
| Total Recoverable | | | | | | | | | | | | | | | |
| 85 YY* | MIN | | 2300 | 1.6 | 150 | 850 | | | | | | | | | |
| | MED | | 3200 | 3.8 | 435 | 900 | | | | | | | | | |
| | MAX | | 4900 | 5.7 | 630 | 1400 | | | | | | | | | |
| # DATA | | 6 | 6 | 6 | 6 | 6 | | | | | | | | | |
| 86 YY* | MIN | | 2000 | 1.2 | 110 | 690 | 220 | 54 | 290 | 2 | 95 | 95 | | | 1800 |
| | MED | | 3250 | 4.0 | 400 | 1000 | 250 | 65 | 335 | 3 | 105 | 110 | | | 2375 |
| | MAX | | 4300 | 6.4 | 570 | 1700 | 390 | 89 | 510 | 4 | 200 | 200 | | | 3300 |
| # DATA | | 15 | 15 | 15 | 15 | 8 | 8 | 8 | 8 | 8 | 8 | 12 | | | 8 |
| 87 YY* | MIN | | 2900 | 3.0 | 310 | 740 | 400 | 80 | 450 | 10 | 110 | 100 | | | 3000 |
| | MED | | 3345 | 3.7 | 420 | 925 | 400 | 80 | 450 | 10 | 110 | 110 | | | 3000 |
| | MAX | | 3700 | 4.4 | 530 | 1000 | 400 | 80 | 450 | 10 | 110 | 130 | | | 3000 |
| # DATA | | 8 | 10 | 10 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | | | 1 |

MINERAL WATER QUALITY DATA

MAP INDEX I-6.....MERR504 HAMBURG DRAIN NEAR CAMP 13 SLOUGH (cont.)

| DATE | EC (microhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS |
|--------|---------------------|------|-----|-----------------|------|-----|----|-----|-----------------|------------------|-------|-----|-------|-----|
| | | | | | | | | | | | | | | |
| 88 WY* | MIN | 3500 | 3.1 | 410 | 860 | | | | | | 110 | 110 | | |
| | MED | 4025 | 4.8 | 515 | 1150 | | | | | | 150 | 140 | | |
| | MAX | 4850 | 6.7 | 560 | 1350 | | | | | | 160 | 160 | | |
| | # DATA | 4 | 4 | 4 | 4 | | | | | | 3 | 4 | | |
| TOTAL | MIN | 2000 | 1.2 | 110 | 690 | 220 | 54 | 290 | 2 | 0 | 95 | 95 | 1800 | |
| | MED | 3300 | 3.9 | 420 | 950 | 260 | 65 | 340 | 3 | <1 | 110 | 110 | 2400 | |
| | MAX | 4900 | 6.7 | 630 | 1700 | 400 | 89 | 510 | 10 | <1 | 200 | 200 | 3300 | |
| | # DATA | 33 | 35 | 35 | 31 | 9 | 9 | 9 | 3 | 12 | 21 | 21 | 9 | |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX I-7.....MERS05 CAMP 13 SLOUGH AT GAUGE STATION

LOCATION Latitude 36 56'04", Longitude 120 41'06"
 In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E.,
 150 ft. N of CCID Main Canal, 6.4 miles W of Russell Ave.,
 9.2 miles S-SE of Los Banos, 6.7 miles W-SW of South Dos Palos.

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS | |
|-------------------|------|-----|------------------|---|-----|-----------------|----|----|----|---|-----------------|------------------|-------|-----|-------|-----|--|
| Total Recoverable | | | | | | | | | | | | | | | | | |
| mg/L | | | | | | | | | | | | | | | | | |
| 05/02/85 | 0910 | 8.1 | 4000 | | 5.2 | 460 | | | | | | | | | | | |
| 06/03/85 | 1000 | | 1900 | | 2.2 | 200 | | | | | | | | | | | |
| 07/04/85 | 0638 | 7.7 | 2800 | | 3.4 | 290 | | | | | | | | | | | |
| 08/15/85 | 0710 | | 2900 | | 4.4 | 330 | | | | | | | | | | | |
| 08/28/85 | 1555 | 8.0 | 2300 | | 3.3 | 270 | | | | | | | | | | | |
| 09/28/85 | 0815 | | 1560 | | 2.0 | 180 | | | | | | | | | | | |
| 10/31/85 | 0745 | 8.2 | 3300 | | 4.8 | 390 | | | | | | | | | | | |
| 12/07/85 | 0755 | 8.2 | 3000 | | 4.4 | 420 | | | | | | | | | | | |
| 01/04/86 | 0800 | 8.2 | 3050 | | 4.4 | 440 | | | | | | | | | | | |
| 01/14/86 | 1045 | 8.0 | 3200 | | 4.8 | 390 | | | | | | | | | | | |
| 02/01/86 | 1525 | 8.2 | 2600 | | 3.1 | 310 | | | | | | | | | | | |
| 03/02/86 | 0810 | 8.2 | 4300 | | 6.9 | 580 | | | | | | | | | | | |
| 04/27/86 | 0750 | 7.6 | 3400 | | 4.7 | 390 | | | | | | | | | | | |
| 06/04/86 | 0800 | 7.6 | 2300 | | 2.7 | 290 | | | | | | | | | | | |
| 06/26/86 | 1615 | 8.4 | 2900 | | 3.1 | 360 | | | | | | | | | | | |
| 08/05/86 | 0825 | 8.8 | 2400 | | 3.2 | 260 | | | | | | | | | | | |
| 09/02/86 | 1545 | | 2600 | | 3.3 | 260 | | | | | | | | | | | |
| 09/28/86 | 0810 | 7.9 | 1100 | | 1.7 | 120 | | | | | | | | | | | |
| 11/03/86 | 1150 | | | | 3.3 | 225 | | | | | | | | | | | |
| 12/04/86 | 1220 | 8.0 | | | 3.4 | 120 | | | | | | | | | | | |
| 01/03/87 | 0800 | 8.4 | 2500 | | 2.3 | 250 | | | | | | | | | | | |
| 02/27/87 | 1320 | 8.1 | 3200 | | 4.8 | 440 | | | | | | | | | | | |
| 04/01/87 | 1415 | 8.0 | 3940 | | 7.4 | 480 | | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-7.....MERR05 CAMP 13 SLOUGH AT GAUGE STATION (cont.)

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SD4 | Ca | Mg | Na | K | CO3 | HCO3 | TOTAL ALK | Hard. | TDS |
|-------------------|--------|-----|------------------|------|-----|-----|----|----|----|---|-----|------|--------------|-------|-----|
| Total Recoverable | | | | | | | | | | | | | | | |
| 05/01/87 | 1440 | 8.5 | 2410 | 2.9 | 260 | | | | | | | | | | |
| 06/01/87 | 1515 | 7.7 | 2690 | 3.8 | 297 | | | | | | | | | | |
| 07/01/87 | 0735 | | 3300 | 3.8 | 430 | | | | | | | | | | |
| 07/31/87 | 0805 | 8.0 | 2600 | 3.7 | 280 | | | | | | | | | | |
| 09/01/87 | 0820 | | 2610 | 3.7 | 280 | | | | | | | | | | |
| 10/01/87 | 0855 | 7.8 | 3280 | 5.3 | 380 | | | | | | | | | | |
| 11/03/87 | 1430 | 8.0 | 4900 | 8.0 | 910 | | | | | | | | | | |
| 12/01/87 | 1525 | 8.0 | 1200 | 0.67 | 170 | | | | | | | | | | |
| 01/27/88 | 1345 | 7.7 | 4250 | 5.6 | 480 | | | | | | | | | | |
| 03/09/88 | 1435 | | 4550 | 7.1 | 520 | | | | | | | | | | |
| 03/30/88 | 1435 | 8.0 | 4900 | 5.5 | 380 | | | | | | | | | | |
| Total Recoverable | | | | | | | | | | | | | | | |
| 85 WY* | MIN | | 1560 | 2.0 | 180 | | | | | | | | | | |
| | MED | | 2550 | 3.4 | 280 | | | | | | | | | | |
| | MAX | | 4000 | 5.2 | 460 | | | | | | | | | | |
| | # DATA | | 6 | 6 | 6 | | | | | | | | | | |
| 86 WY* | MIN | | 1100 | 1.7 | 120 | | | | | | | | | | |
| | MED | | 2950 | 3.9 | 375 | | | | | | | | | | |
| | MAX | | 4300 | 6.9 | 580 | | | | | | | | | | |
| | # DATA | | 12 | 12 | 12 | | | | | | | | | | |
| 87 WY* | MIN | | 2410 | 2.3 | 120 | | | | | | | | | | |
| | MED | | 2650 | 3.7 | 280 | | | | | | | | | | |
| | MAX | | 3940 | 7.4 | 480 | | | | | | | | | | |
| | # DATA | | 8 | 10 | 10 | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX I-7.....MERRSOS CAMP 13 SLOUGH AT GAUGE STATION (cont.)

| DATE | EC (Umhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | TDS |
|--------|------------------|-------------------|------|-----------------|------|-----|-----|-----|-----------------|------------------|-------|-----|------|
| | | Total Recoverable | | | | | | | | | | | |
| 88 WY* | | | | | | | | | | | 0 | 90 | 90 |
| | MIN | 1200 | 0.67 | 170 | 190 | | | | | | 0 | 160 | 160 |
| | MED | 4400 | 5.6 | 430 | 980 | | | | | | <1 | 190 | 190 |
| | MAX | 4900 | 8.0 | 910 | 1300 | | | | | | 5 | 5 | 6 |
| | # DATA | 6 | 6 | 6 | 6 | | | | | | | | |
| TOTAL | MIN | 1100 | 0.67 | 120 | 190 | 180 | 60 | 2 | 5 | 0 | 90 | 90 | 1700 |
| | MED | 2950 | 3.8 | 320 | 795 | 230 | 71 | 350 | 6 | 0 | 130 | 130 | 2350 |
| | MAX | 4900 | 8.0 | 910 | 1300 | 255 | 100 | 560 | 10 | <1 | 190 | 190 | 3200 |
| | # DATA | 22 | 34 | 34 | 30 | 4 | 4 | 4 | 4 | 5 | 9 | 20 | 4 |

* Water year: extending from 1 October of one year to 1 October of the following year.

MINERAL WATER QUALITY DATA

MAP INDEX I-8.....MERR502 CHARLESTON DRAIN AT CCID MAIN CANAL

LOCATIONLatitude 36 56'59", Longitude 121 46'55"
 In NE 1/4, SE 1/4, NE 1/4, Sec. 29, T.11S., R.11E.,
 N side of CCID Main Canal, 8.7 miles S-SE of Los Baños,
 7.9 miles W-SW of South Dos Palos.

| DATE | TIME | pH | EC (umhos/cm) | mg/L | | | | | | Total Recoverable | Total | Alk | Hard. | TDS |
|----------|------|------|------------------|------|------|------|-----|-----|-----|----------------------|-------|------|-------|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | | |
| 05/02/85 | 0745 | 7.7 | 3900 | 2.7 | 450 | 1150 | | | | | | | | |
| 06/03/85 | 0925 | 5500 | 5.5 | 670 | 1800 | | | | | | | | | |
| 07/02/85 | 0625 | 7.5 | 3900 | 2.5 | 340 | 1600 | | | | | | | | |
| 08/15/85 | 0655 | 2200 | 0.65 | 300 | 500 | | | | | | | | | |
| 08/28/85 | 1625 | 8.1 | 4200 | 4.9 | 600 | 1400 | | | | | | | | |
| 09/28/85 | 0805 | 1620 | 1.5 | 220 | 400 | | | | | | | | | |
| 10/31/85 | 0730 | 8 | 3640 | 3.7 | 470 | 1580 | | | | | | | | |
| 12/07/85 | 0735 | 8 | 5600 | 6.7 | 770 | 1800 | | | | | | | | |
| 01/04/86 | 0740 | 7.9 | 5900 | 7.7 | 330 | 1400 | | | | | | | | |
| 01/14/86 | 1030 | 7.8 | 6000 | 5.1 | 790 | 2100 | | | | | | | | |
| 02/01/86 | 1510 | 8.4 | 5300 | 5.7 | 770 | 1800 | 490 | 115 | 650 | 3 | 0 | 120 | 1700 | 4400 |
| 03/01/86 | 0755 | 8 | 2200 | 1.8 | 220 | 670 | 160 | 51 | 180 | 3.8 | 0 | 100 | 620 | 1500 |
| 04/19/86 | 0620 | 4500 | 4.7 | 510 | 1200 | 350 | 79 | 570 | 4.3 | 0 | 140 | 140 | 1500 | 3700 |
| 04/27/86 | 0735 | 6.8 | 3000 | 2.9 | 410 | 970 | 258 | 60 | 348 | 5.1 | 0 | 100 | 900 | 2100 |
| 05/13/86 | 0740 | 5400 | 5.0 | 780 | 1800 | 400 | 100 | 560 | 2.7 | 0 | 140 | 140 | 4100 | 3700 |
| 06/04/86 | 0740 | 6.8 | 4800 | 5.1 | 670 | 1600 | 420 | 98 | 630 | 5.6 | 0 | 150 | 1400 | 3500 |
| 06/17/86 | 0715 | 2900 | 2.4 | 350 | 840 | 200 | 52 | 280 | 5.8 | 0 | 120 | 120 | 850 | 2100 |
| 06/26/86 | 1540 | 7.6 | 4500 | 4.5 | 590 | 1600 | 490 | 84 | 465 | 4.7 | 0 | 260 | 260 | 1500 |
| 08/05/86 | 0810 | 8.6 | 1700 | 1.5 | 210 | 470 | | | | | | | | |
| 09/02/86 | 1535 | 4000 | 4.2 | 460 | 1300 | | | | | | | | | |
| 09/28/86 | 0750 | 7.7 | 4800 | 5.6 | 620 | 2100 | | | | | | | | |
| 11/03/86 | 1205 | 1.9 | 260 | 630 | | | | | | | | | | |
| 12/04/86 | 1240 | 5.5 | 580 | 1450 | 510 | 100 | 650 | 12 | 0 | 160 | 160 | 1650 | 4050 | |

MINERAL WATER QUALITY DATA

MAP INDEX I-8.....MER502 CHARLESTON DRAIN AT CCID MAIN CANAL (cont.)

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | Alk | Hard. | TDS |
|-------------------|------|-----|------------------|-----|------|------|----|----|----|---|-----|------|-------|-----|-------|-----|
| Total Recoverable | | | | | | | | | | | | | | | | |
| 01/03/87 | 0740 | 8 | 590 | 6.0 | 360 | 2000 | | | | | | | 140 | | | |
| 02/27/87 | 1300 | 8 | 5350 | 5.2 | 750 | | | | | | | | | | | |
| 04/01/87 | 1440 | 7.8 | 4660 | 4.3 | 560 | | | | | | | | | | | |
| 05/01/87 | 1415 | 8 | 4610 | 4.1 | 590 | | | | | | | | | | | |
| 06/01/87 | 1505 | 7.4 | 3610 | 3.5 | 332 | 1170 | | | | | | | | | | |
| 07/01/87 | 0705 | | 4100 | 7.6 | 560 | | | | | | | | | | | |
| 07/31/87 | 0750 | 7.7 | 2800 | 2.7 | 300 | 620 | | | | | | | | | | |
| 09/01/87 | 0800 | | 3320 | 3.0 | 400 | 880 | | | | | | | | | | |
| 10/01/87 | 0835 | 7.3 | 2730 | 2.4 | 320 | 660 | | | | | | | | | | |
| 11/03/87 | 1420 | 8.1 | 4550 | 4.7 | 59 | 1700 | | | | | | | | | | |
| 12/01/87 | 1510 | 7.3 | 10220 | 24 | 1600 | 2700 | | | | | | | | | | |
| 01/27/88 | 1330 | 7.5 | 5600 | 4.5 | 680 | 1600 | | | | | | | | | | |
| 03/09/88 | 1425 | | 4200 | 3.3 | 500 | 1200 | | | | | | | | | | |
| 03/30/88 | 1420 | 7.8 | 4400 | 4.1 | 500 | 1300 | | | | | | | | | | |

| 85 WY* | MIN | 1620 | 0.65 | 220 | 400 | | | | | | | | | | | |
|--------|--------|------|------|-----|------|-----|------|-----|-----|--|--|--|--|--|--|--|
| | MED | 3900 | 2.6 | 395 | 1275 | | | | | | | | | | | |
| | MAX | 5500 | 5.5 | 670 | 1800 | | | | | | | | | | | |
| | # DATA | 6 | 6 | 6 | 6 | | | | | | | | | | | |
| 86 WY* | MIN | 1700 | 1.5 | 210 | 470 | 160 | 51 | 180 | 2.7 | | | | | | | |
| | MED | 4500 | 4.7 | 510 | 1580 | 375 | 81.5 | 510 | 4.5 | | | | | | | |
| | MAX | 6000 | 7.7 | 790 | 2100 | 490 | 115 | 650 | 5.8 | | | | | | | |
| | # DATA | 15 | 15 | 15 | 8 | 8 | 8 | 8 | 8 | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX I-B.....MER502 CHARLESTON DRAIN AT CCID MAIN CANAL (cont.)

| DATE | EC (umhos/cm) | Total Recoverable | | | | | | Total Alk | TDS | |
|--------|------------------|-------------------|------|-----------------|------|-----|-----|--------------|-----|-----|
| | | B | Cl | SO ₄ | Ca | Mg | Na | K | | |
| 87 WY* | MIN | 590 | 1.9 | 260 | 620 | 510 | 100 | 650 | 12 | 160 |
| | MED | 3855 | 4.2 | 480 | 1035 | 510 | 100 | 650 | 12 | 160 |
| | MAX | 5350 | 7.6 | 750 | 2000 | 510 | 100 | 650 | 12 | 160 |
| | # DATA | 8 | 10 | 10 | 6 | 1 | 1 | 1 | 1 | 5 |
| 88 WY* | MIN | 2730 | 2.4 | 59 | 660 | | | 0 | 100 | 100 |
| | MED | 4475 | 4.6 | 540 | 1500 | | | 0 | 150 | 150 |
| | MAX | 10220 | 24 | 1600 | 2700 | | | <1 | 360 | 360 |
| | # DATA | 6 | 6 | 6 | 6 | | | 5 | 5 | 6 |
| TOTAL | MIN | 590 | 0.65 | 59 | 400 | 160 | 51 | 180 | 2.7 | 0 |
| | MED | 4200 | 4.5 | 500 | 1400 | 400 | 84 | 560 | 4.7 | 0 |
| | MAX | 10220 | 24 | 1600 | 2700 | 510 | 115 | 650 | 12 | <1 |
| | # DATA | 35 | 37 | 37 | 33 | 9 | 9 | 9 | 14 | 23 |
| | | | | | | | | | | 9 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX 1-9.....MER555 ALMOND DRIVE DRAIN

LOCATIONLatitude 36 59'55", Longitude 120 49'00"
 In SW 1/4, SW 1/4, SW 1/4, Sec. 6, T.11S., R.11E.,
 N side of Almond Dr., 1.1 miles E of Mercy Springs Drain,
 100 ft. E of CCID Main Canal, 4.7 miles S of Los Banos.

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Alk | Total | Hard. | TDS | Total Recoverable | |
|----------|--------|-----|------------------|------|-----|-----|----|----|----|---|-----|------|-----|-------|-------|-----|-------------------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L |
| 06/13/85 | 1040 | 7.7 | 1520 | 1.6 | 160 | 340 | | | | | | | | | | 0 | 280 | 280 |
| 01/30/87 | 1300 | 8.4 | 2200 | 2.7 | 210 | 410 | | | | | | | | | | | | |
| 02/27/87 | 1240 | 7.9 | 1980 | 2.0 | 250 | | | | | | | | | | | | | |
| 04/01/87 | 1500 | 8.4 | 2590 | 2.9 | 290 | | | | | | | | | | | | | |
| 05/01/87 | 1355 | 8.3 | 1810 | 1.8 | 190 | | | | | | | | | | | | | |
| 06/01/87 | 1445 | 7.4 | 2140 | 2.1 | 237 | 530 | | | | | | | | | | | | |
| 07/01/87 | 645 | | 1800 | 2.4 | 240 | | | | | | | | | | | | | |
| 07/31/87 | 725 | 7.8 | 1100 | 0.83 | 110 | 160 | | | | | | | | | | 120 | | |
| 09/01/87 | 730 | | 1870 | 2.1 | 200 | 380 | | | | | | | | | | 200 | | |
| 10/01/87 | 815 | 7.0 | 739 | 0.22 | 130 | 47 | | | | | | | | | | | | |
| 11/03/87 | 1400 | 8.8 | 1050 | 0.54 | 170 | 130 | | | | | | | | | | 89 | | |
| 12/01/87 | 1450 | 8.1 | 1720 | 1.2 | 200 | 310 | | | | | | | | | | | | |
| 01/05/88 | 940 | 8.0 | 2850 | 3.2 | 260 | 600 | | | | | | | | | | | | |
| 01/27/88 | 1305 | 7.2 | 2400 | 2.4 | 240 | 480 | | | | | | | | | | | | |
| 03/09/88 | 1410 | | 2000 | 2.0 | 200 | 460 | | | | | | | | | | 290 | | |
| 03/30/88 | 1400 | 8.1 | 2500 | 2.7 | 250 | 550 | | | | | | | | | | 220 | | |
| | | | | | | | | | | | | | | | | | | |
| 85 WY* | MIN | | 1520 | 1.6 | 160 | 340 | | | | | | | | | | 0 | | |
| | MED | | 1520 | 1.6 | 160 | 340 | | | | | | | | | | 0 | | |
| | MAX | | 1520 | 1.6 | 160 | 340 | | | | | | | | | | 0 | | |
| | # DATA | | (1) | 1 | 1 | 1 | | | | | | | | | | 1 | | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-9.....MER555 ALMOND DRIVE DRAIN (cont.)

| DATE | EC (Umhos/cm) | Total Recoverable | | | | | | Total HCO ₃ | Total Alk |
|--------|------------------|-------------------|------|-----------------|------|----|----|---------------------------|--------------|
| | | B | Cl | SO ₄ | Ca | Mg | Na | K | |
| 87 WY* | MIN | 1100 | 0.83 | 110 | 160 | | | | 280 |
| | MED | 1925 | 2.1 | 224 | 395 | | | | 200 |
| | MAX | 2590 | 2.9 | 290 | 530 | | | | 280 |
| | # DATA | 8 | 8 | 8 | 4 | | | | 1 |
| 88 WY* | MIN | 739 | 0.22 | 130 | 47 | | | | 94 |
| | MED | 2000 | 2 | 200.0 | 460 | | | | 89 |
| | MAX | 2850 | 4.1 | 500 | 1300 | | | | 160 |
| | # DATA | 7 | 7 | 7 | 7 | | | | 330 |
| TOTAL | MIN | 739 | 0.22 | 110 | 47 | | | | 6 |
| | MED | 1925 | 2.1 | 205 | 395 | | | | 6 |
| | MAX | 2850 | 4.1 | 500 | 1300 | | | | 7 |
| | # DATA | 16 | 16 | 16 | 12 | | | | 10 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX I-10.....MER509 RICE DRAIN AT MALLARD ROAD

LOCATIONLatitude 36 59'22", Longitude 120 14'42"
 In NE 1/4, NW 1/4, SW 1/4, sec. 7, T.11S., R.11E.,
 S of Santa Fe Grade at Brito, 50 ft. W of Mallard Rd.,
 4.5 miles W of Dos Palos.

| DATE | TIME | pH | EC (umhos/cm) | mg/l..... | | | | | | Total Recoverable | | | | |
|----------|------|-----|------------------|-----------|-----|------|-----|-----|------|----------------------|-----|------|-----|-------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Alk | Hard. |
| 05/02/85 | 1155 | 7.9 | 2800 | 6.6 | 240 | 864 | | | | | | | | |
| 06/03/85 | 1115 | | 2300 | 5.4 | 280 | 660 | | | | | | | | |
| 07/02/85 | 0825 | 7.8 | 2600 | 6.1 | 250 | 770 | | | | | | | | |
| 08/15/85 | 0850 | | 1800 | 3.2 | 200 | 450 | | | | | | | | |
| 08/28/85 | 1250 | 7.6 | 1900 | 4.0 | 200 | 500 | | | | | | | | |
| 09/29/85 | 1030 | | 3500 | 8.4 | 430 | 1000 | | | | | | | | |
| 10/31/85 | 0940 | 8.3 | 3300 | 7.1 | 350 | 1080 | | | | | | | | |
| 12/07/85 | 0940 | 7.8 | 3850 | 8.3 | 460 | 1250 | | | | | | | | |
| 01/04/86 | 0910 | 8.3 | 5100 | 12 | 620 | 1550 | | | | | | | | |
| 01/14/86 | 1245 | 7.4 | 5600 | 14 | 670 | 2300 | | | | | | | | |
| 03/02/86 | 1000 | 8.0 | 6900 | 19 | 740 | 1900 | 260 | 190 | 1100 | 4 | 12 | 200 | 212 | 1400 |
| 04/27/86 | 1010 | 8.2 | 3800 | 11 | 590 | 1700 | 236 | 107 | 557 | 4 | 0 | 170 | 170 | 1040 |
| 06/04/86 | 1015 | 7.8 | 1800 | 5.0 | 160 | 680 | | | | | | | | |
| 06/26/86 | 1830 | 7.8 | 2500 | 5.9 | 200 | 720 | | | | | | | | |
| 08/05/86 | 1015 | 8.1 | 1600 | 3.8 | 150 | 450 | | | | | | | | |
| 09/02/86 | 1345 | | 2000 | 4.5 | 170 | 500 | | | | | | | | |
| 09/28/86 | 1056 | 7.8 | 3200 | 8.1 | 280 | 770 | | | | | | | | |
| 11/03/86 | | | | | | | | | | | | | | |
| 12/04/86 | 1000 | 7.8 | | 7.3 | 260 | 1100 | | | | | | | | |
| 01/03/87 | 0925 | 8.1 | 4100 | 10 | 350 | 1500 | | | | | | | | |
| 01/30/87 | 1325 | 7.7 | 1300 | 2.5 | 110 | 340 | | | | | | | | |
| 02/27/87 | 1505 | 8.1 | 5170 | 13 | 580 | | | | | | | | | |
| 04/01/87 | 1250 | 7.8 | 4390 | 13 | 530 | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX I-10.....MER509 RICE DRAIN AT MALLARD ROAD (cont.)

| DATE | TIME | pH | EC (micros/cm) | mg/L | | | | mg/L | | | | mg/L | | | | mg/L | | | |
|-------------------|--------|-----|-------------------|------|-----|------|----|------|----|---|-----|------|-----|-------|-------|------|-----|--|--|
| | | | | B | Cl | SO4 | Ca | Hg | Na | K | CO3 | HCO3 | Alk | Hard. | Total | TDS | | | |
| Total Recoverable | | | | | | | | | | | | | | | | | | | |
| 05/01/87 | 1615 | 8.6 | 2220 | 5.5 | 240 | | | | | | | | | | | | | | |
| 06/01/87 | 1650 | 7.4 | 1910 | 3.7 | 195 | 510 | | | | | | | | | | | | | |
| 07/01/87 | 0905 | | 3300 | 7.8 | 330 | | | | | | | | | | | | | | |
| 07/31/87 | 1000 | 7.6 | 2500 | 5.2 | 240 | 550 | | | | | | | | | | | 180 | | |
| 09/01/87 | 1015 | | 2270 | 4.3 | 260 | 500 | | | | | | | | | | | 204 | | |
| 10/01/87 | 1035 | 8.0 | 3190 | 7.3 | 380 | 880 | | | | | | | | | | | 170 | | |
| 11/03/87 | 1605 | 8.1 | 3000 | 6.4 | 380 | 1000 | | | | | | | | | | | 210 | | |
| 12/01/87 | 1620 | 7.7 | 2680 | 4.9 | 290 | 660 | | | | | | | | | | | 210 | | |
| 01/05/88 | 1125 | 7.9 | 4500 | 8.8 | 440 | 1200 | | | | | | | | | | | 200 | | |
| 01/27/88 | 1545 | 8.1 | 3050 | 5.3 | 350 | 740 | | | | | | | | | | | 250 | | |
| 03/09/88 | 1615 | | 3350 | 7.4 | 350 | 1100 | | | | | | | | | | | 220 | | |
| 03/30/88 | 1615 | 8.1 | 1700 | 2.9 | 200 | 430 | | | | | | | | | | | 190 | | |
| | | | | | | | | | | | | | | | | | 130 | | |
| 85 WY* | MIN | | 1800 | 3.2 | 200 | 450 | | | | | | | | | | | | | |
| | MED | | 2450 | 5.7 | 245 | 715 | | | | | | | | | | | | | |
| | MAX | | 3500 | 8.4 | 430 | 1000 | | | | | | | | | | | | | |
| | # DATA | | 6 | 6 | 6 | 6 | | | | | | | | | | | | | |
| 86 WY* | MIN | | 1600 | 3.8 | 15 | 450 | | | | | | | | | | | | | |
| | MED | | 3300 | 8.1 | 350 | 1080 | | | | | | | | | | | | | |
| | MAX | | 6900 | 19 | 740 | 2300 | | | | | | | | | | | | | |
| | # DATA | | 11 | 11 | 11 | 11 | | | | | | | | | | | | | |
| 87 WY* | MIN | | 1300 | 2.5 | 110 | 340 | | | | | | | | | | | | | |
| | MED | | 2500 | 6.1 | 260 | 550 | | | | | | | | | | | | | |
| | MAX | | 5170 | 13 | 580 | 1500 | | | | | | | | | | | | | |
| | # DATA | | 9 | 11 | 11 | 7 | | | | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX I-10.....MERR509 RICE DRAIN AT MALLARD ROAD (cont.)

| DATE | EC (umhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | TDS |
|-------------------|------------------|------|-----|-----------------|------|-----|-----|------|-----------------|------------------|-------|-----|------|
| Total Recoverable | | | | | | | | | | | | | |
| 88 WY* | MIN | 1700 | 3.8 | 270 | 580 | | | | | | 0 | 190 | 170 |
| | MED | 3050 | 6.4 | 350 | 880 | | | | | | 0 | 215 | 210 |
| | MAX | 4500 | 8.8 | 440 | 1200 | | | | | | <1 | 300 | 300 |
| | # DATA | 7 | 7 | 7 | 7 | | | | | | 6 | 6 | 7 |
| TOTAL | MIN | 1300 | 2.5 | 110 | 340 | 150 | 79 | 350 | 4 | 0 | 120 | 120 | 2000 |
| | MED | 3000 | 6.4 | 280 | 770 | 236 | 107 | 557 | 4 | 0 | 200 | 190 | 2750 |
| | MAX | 6900 | 19 | 740 | 2300 | 260 | 190 | 1100 | 15 | 12 | 300 | 310 | 5000 |
| | # DATA | 33 | 35 | 35 | 31 | 3 | 3 | 3 | 3 | 10 | 10 | 21 | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX I-11.....MERR21

BOUNDARY DRAIN AT DEPARTMENT OF FISH AND GAME PUMP

LOCATIONLatitude 37 06'32", Longitude 120 46'45"

In NE 1/4, SE 1/4, NE 1/4, Sec. 32, T.9S., R.11E.,
 N of Henry Miller Road, 4.6 miles NE of Los Banos.

| DATE | TIME | pH | EC (micros/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|------|-----|-------------------|-------------------|-----|-----|----|----|-----|-------|-----|-------|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 06/14/85 | 0915 | 7.5 | 1070 | 0.47 | 180 | 130 | | | | | | | |
| 08/15/85 | 1040 | | 1050 | 0.43 | 180 | 120 | | | | | | | |
| 08/29/85 | 0800 | 7.5 | 1100 | 0.39 | 220 | 140 | | | | | | | |
| 09/28/85 | 1210 | | 1200 | 0.51 | 210 | 150 | | | | | | | |
| 10/31/85 | 1130 | 7.9 | 1710 | 0.65 | 320 | 250 | | | | | | | |
| 12/07/85 | 1350 | 7.7 | 3300 | 1.7 | 630 | 530 | | | | | | | |
| 01/04/86 | 1210 | 8.1 | 3800 | 1.8 | 730 | 600 | | | | | | | |
| 01/14/86 | 1500 | 7.3 | 3600 | 1.8 | 660 | 640 | | | | | | | |
| 03/02/86 | 1215 | 7.9 | 2200 | 0.94 | 380 | 350 | 71 | 58 | 300 | 4 | 4 | 130 | 240 |
| 04/26/86 | 1555 | 7.5 | 1200 | 0.39 | 220 | 150 | 50 | 32 | 143 | 5 | 0 | 90 | 134 |
| 06/03/86 | 1600 | 7.4 | 1000 | 0.52 | 170 | 200 | | | | | | 90 | 180 |
| 06/26/86 | 1400 | 7.3 | 1040 | 0.40 | 160 | 130 | | | | | | 80 | 230 |
| 08/04/86 | 1620 | 8.2 | 1200 | 0.48 | 200 | 160 | | | | | | 100 | 660 |
| 09/02/86 | 1220 | | 1100 | 0.39 | 160 | 130 | | | | | | 130 | 1200 |
| 09/27/86 | 1540 | 7.6 | 1000 | 0.47 | 140 | 130 | | | | | | 90 | 96 |
| 11/03/86 | 1400 | | 0.49 | 200 | 150 | | | | | | | 110 | 110 |
| 12/04/86 | 1500 | 7.2 | | 0.78 | 250 | 220 | 71 | 51 | 270 | 9 | 0 | 150 | 370 |
| 01/02/87 | 1555 | 7.9 | 2200 | 0.87 | 300 | 310 | | | | | | 130 | |
| 01/30/87 | 1230 | 7.0 | 3400 | 1.4 | 580 | 480 | | | | | | 110 | |
| 02/27/87 | 1155 | 7.5 | 1930 | 0.95 | 350 | | | | | | | 198 | |
| 04/01/87 | 1200 | 7.3 | 2210 | 1.0 | 400 | | | | | | | 150 | |
| 05/01/87 | 1315 | 7.6 | 1250 | 0.54 | 200 | | | | | | | 190 | |
| 06/01/87 | 1400 | 7.2 | 1140 | 0.47 | 176 | | | | | | | 140 | |

MINERAL WATER QUALITY DATA

MAP INDEX 1-11.....MER521 BOUNDARY DRAIN AT DEPARTMENT OF FISH AND GAME PUMP (cont.)

| DATE | TIME | pH | EC (mhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HC03 | Total Alk | Hard. | TDS | Total |
|----------|--------|-----|-----------------|------|------|-------|----|----|----|---|-----|------|-----------|-------|-----|-------------------|
| | | | | | | | | | | | | | | | | mg/L |
| | | | | | | | | | | | | | | | | Total Recoverable |
| 07/01/87 | 1015 | | | 1200 | 0.68 | 180 | | | | | | | | | | 110 |
| 07/31/87 | 1125 | 7.2 | | 960 | 0.35 | 140 | | | | | | | | | | 110 |
| 09/01/87 | 1115 | | | 1120 | 0.43 | 190 | | | | | | | | | | 110 |
| 10/01/87 | 1125 | 7.4 | | 1470 | 0.48 | 230 | | | | | | | | | | 140 |
| 11/03/87 | 1315 | 8.0 | | 1500 | 0.65 | 260 | | | | | | | | | | 120 |
| 12/01/87 | 1410 | 7.3 | | 3270 | 1.4 | 530 | | | | | | | | | | 120 |
| 01/05/88 | 1245 | 7.3 | | 4500 | 1.9 | 640 | | | | | | | | | | 180 |
| 01/27/88 | 1635 | 7.5 | | 2700 | 0.87 | 440 | | | | | | | | | | 240 |
| 03/09/88 | 1325 | | | 1650 | 0.60 | 220 | | | | | | | | | | 290 |
| 03/30/88 | 1310 | 7.6 | | 1850 | 0.68 | 280 | | | | | | | | | | 290 |
| | | | | | | | | | | | | | | | | 150 |
| | | | | | | | | | | | | | | | | 150 |
| 85 WY* | MIN | | | 1050 | 0.39 | 180 | | | | | | | | | | 150 |
| | MED | | | 1090 | 0.45 | 195 | | | | | | | | | | 150 |
| | MAX | | | 1200 | 0.51 | 220 | | | | | | | | | | 150 |
| | # DATA | | | 4 | 4 | 4 | | | | | | | | | | 150 |
| 86 WY* | MIN | | | 1000 | 0.39 | 140 | | | | | | | | | | 660 |
| | MED | | | 1710 | 0.65 | 250 | | | | | | | | | | 930 |
| | MAX | | | 3600 | 1.8 | 660 | | | | | | | | | | 1200 |
| | # DATA | | | 11 | 13 | 13 | | | | | | | | | | 2 |
| 87 WY* | MIN | | | 960 | 0.35 | 140 | | | | | | | | | | 96 |
| | MED | | | 1250 | 0.54 | 200.0 | | | | | | | | | | 115 |
| | MAX | | | 3800 | 1.8 | 730 | | | | | | | | | | 180 |
| | # DATA | | | 11 | 11 | 11 | | | | | | | | | | 6 |

MINERAL WATER QUALITY DATA

MAP INDEX I-11.....MERS21 BOUNDARY DRAIN AT DEPARTMENT OF FISH AND GAME PUMP (cont.)

| DATE | EC (micros/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | Total TDS |
|--------|-------------------|------|------|-----------------|-----|----|----|-----|-----------------|------------------|-----------|-----------|
| | | | | | | | | | | | | |
| 88 WY* | MIN | 1650 | 0.60 | 220 | 240 | 71 | 58 | 300 | 4 | 0 | 130 | 134 |
| | MED | 2200 | 0.94 | 380 | 350 | 71 | 58 | 300 | 4 | <1 | 170 | 170 |
| | MAX | 4500 | 4.4 | 640 | 830 | 71 | 58 | 300 | 4 | 4 | 290 | 290 |
| | # DATA | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 5 | 5 | 5 | 5 |
| TOTAL | MIN | 960 | 0.35 | 140 | 100 | 50 | 32 | 143 | 4 | 0 | 90 | 80 |
| | MED | 1470 | 0.60 | 220 | 190 | 71 | 51 | 270 | 5 | 0 | 160 | 130 |
| | MAX | 4500 | 4.4 | 730 | 830 | 71 | 58 | 300 | 9 | 8 | 290 | 290 |
| | # DATA | 31 | 33 | 33 | 29 | 3 | 3 | 3 | 3 | 10 | 10 | 21 |
| | | | | | | | | | | | | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX I-12.....SALT SLOUGH DITCH AT HEREFORD ROAD

LOCATIONLatitude 37° 08' 30", Longitude 120° 45' 17"
 NW 1/4, NE 1/4, NW 1/4, Sec. 22, T. 9S., R. 11E.,
 3.0 miles N on Hereford Road from Henry Miller Road.

| DATE | TIME | pH | EC (µmhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | Hard. | TDS | Total Recoverable |
|----------|------|-----|------------------|------|-----|-----------------|-----|----|-----|----|-----------------|------------------|--------------|-------|-----|----------------------|
| | | | | | | | | | | | | | | | | mg/L |
| 06/14/85 | 0935 | 7.4 | 920 | 0.39 | 130 | 110 | | | | | | | | | | |
| 07/02/85 | 1010 | 7.8 | 660 | 0.30 | 84 | 76 | | | | | | | | | | |
| 08/15/85 | 1100 | | 880 | 0.37 | 140 | 100 | | | | | | | | | | |
| 08/29/85 | 0820 | 7.6 | 780 | 0.39 | 120 | 100 | | | | | | | | | | |
| 09/28/85 | 1235 | | 850 | 0.33 | 110 | 96 | | | | | | | | | | |
| 10/31/85 | 1150 | 8.1 | 880 | 0.42 | 130 | 98 | | | | | | | | | | |
| 12/07/85 | 1405 | 8.2 | 1460 | 0.49 | 220 | 290 | | | | | | | | | | |
| 01/04/86 | 1230 | 8.6 | 1410 | 0.49 | 220 | 250 | | | | | | | | | | |
| 01/14/86 | 1550 | | 1600 | 1.1 | 240 | 250 | | | | | | | | | | 220 |
| 02/07/86 | 0935 | 7.6 | 1600 | 0.24 | 220 | 160 | 101 | 43 | 151 | 18 | 0 | 240 | 240 | 440 | 920 | |
| 02/17/86 | 0805 | 8.0 | 1100 | 0.35 | 160 | 130 | 68 | 21 | 124 | 7 | 0 | 140 | 140 | 300 | 700 | |
| 03/02/86 | 1240 | 8.0 | 930 | 0.48 | 120 | 150 | 48 | 24 | 94 | 8 | 4 | 120 | 124 | 200 | 590 | |
| 04/19/86 | 0915 | | 550 | 0.26 | 60 | 59 | 34 | 14 | 54 | 3 | 0 | 92 | 92 | 150 | 340 | |
| 04/26/86 | 1540 | 7.8 | 540 | 0.11 | 72 | 57 | 38 | 15 | 52 | 4 | 0 | 90 | 90 | 150 | 310 | |
| 05/13/86 | 1045 | | 600 | 0.17 | 76 | 78 | | | | | | | | | | |
| 06/03/86 | 1540 | 7.6 | 430 | 0.17 | 52 | 70 | | | | | | | | | | 70 |
| 06/16/86 | 1700 | | 640 | 0.10 | 61 | 110 | | | | | | | | | | 110 |
| 06/26/86 | 1345 | 7.5 | 790 | 0.25 | 105 | 96 | | | | | | | | | | 110 |
| 08/04/86 | 1600 | 8.2 | 620 | 0.34 | 79 | 77 | | | | | | | | | | 130 |
| 09/02/86 | 1210 | | 780 | 0.34 | 91 | 91 | | | | | | | | | | 110 |
| 09/27/86 | 1525 | 7.8 | 760 | 0.32 | 95 | 100 | | | | | | | | | | 120 |
| 11/03/86 | 1415 | | | 0.29 | 100 | 80 | | | | | | | | | | 120 |
| 12/04/86 | | 7.8 | | 0.35 | 130 | 120 | 64 | 28 | 95 | 7 | 0 | 150 | 150 | 250 | 540 | |

MINERAL WATER QUALITY DATA

MAP INDEX I-12.....SALT SLOUGH DITCH AT HEREFORD ROAD (cont.)

A-33

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MINERAL WATER QUALITY DATA

MAP INDEX 1-12.....SALT SLOUGH DITCH AT HEREFORD ROAD (cont.)

| DATE | EC (umhos/cm) | Total mg/L | | | | | | Total Recoverable | | | | TDS |
|--------|------------------|------------|------|-----|-----|-----|----|-------------------|-----|------|-----|-----|
| | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Alk | |
| 87 WY* | MIN | 820 | 0.27 | 95 | 75 | 64 | 28 | 95 | 7 | 0 | 140 | 110 |
| | MED | 1000 | 0.39 | 130 | 120 | 64 | 28 | 95 | 7 | 0 | 145 | 140 |
| | MAX | 1500 | 0.76 | 200 | 200 | 64 | 28 | 95 | 7 | 0 | 150 | 190 |
| | # DATA | 9 | 11 | 11 | 7 | 1 | 1 | 1 | 1 | 2 | 2 | 6 |
| 88 WY* | MIN | 1050 | 0.26 | 150 | 100 | | | | | 0 | 150 | 130 |
| | MED | 1150 | 0.35 | 200 | 180 | | | | | 0 | 175 | 150 |
| | MAX | 1950 | 0.68 | 290 | 270 | | | | | <1 | 290 | 290 |
| | # DATA | 7 | 7 | 7 | 7 | | | | | 6 | 6 | 7 |
| A-34 | MIN | 430 | 0.1 | 52 | 57 | 34 | 14 | 52 | 3 | 0 | 90 | 70 |
| | MED | 930 | 0.35 | 130 | 110 | 54 | 23 | 95 | 7 | 0 | 150 | 135 |
| | MAX | 1950 | 1.1 | 290 | 290 | 101 | 43 | 151 | 18 | 4 | 290 | 290 |
| | # DATA | 37 | 39 | 39 | 35 | 6 | 6 | 6 | 6 | 16 | 13 | 26 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX 1-13.....MERS13 GARZAS CREEK AT HUNT ROAD

LOCATION Latitude 37 13'01", Longitude 120 59'36"
 In SE 1/4, SE 1/4, Sec. 20, T. 8S., R. 9E.,
 2.4 miles S of Gustine on W side of Hunt Rd.

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | Alk | Hard. | TDS | Total Recoverable | | |
|----------|------|-----|------------------|------|------|-----|-----|----|----|----|-----|------|-------|-----|-------|-----|-------------------|------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L | mg/L |
| 08/14/85 | 1625 | | | 920 | 0.70 | 110 | 160 | | | | | | | | | | | | |
| 08/29/85 | 1100 | 8.1 | | 840 | 0.70 | 110 | 160 | | | | | | | | | | | | |
| 09/27/85 | 1755 | | | 750 | 0.55 | 110 | 99 | | | | | | | | | | | | |
| 10/30/85 | 1510 | 8.6 | | 950 | 0.92 | 130 | 168 | | | | | | | | | | | | |
| 12/07/85 | 1705 | 8.6 | | 1210 | 0.61 | 160 | 190 | | | | | | | | | | | | |
| 01/03/86 | 1710 | 8.6 | | 1500 | 1.0 | 180 | 230 | | | | | | | | | | | | |
| 01/14/86 | 1140 | | | 1700 | 2.3 | 210 | 190 | | | | | | | | | | | | |
| 02/16/86 | 1300 | 8.0 | | 520 | 0.26 | 76 | 100 | 29 | 19 | 46 | 4 | 0 | 120 | 170 | 330 | | | | |
| 03/02/86 | 1415 | 8.3 | | 800 | 0.49 | 90 | 110 | 36 | 22 | 82 | 4 | 0 | 100 | 180 | 330 | | | | |
| 06/03/86 | 1155 | 8.0 | | 330 | 0.32 | 26 | 120 | | | | | | | | | | | | |
| 06/26/86 | 1050 | 8.0 | | 800 | 0.61 | 87 | 150 | | | | | | | | | | | | |
| 08/04/86 | 1215 | 8.2 | | 370 | 0.12 | 36 | 32 | | | | | | | | | | | | |
| 09/02/86 | 1315 | | | 360 | 0.16 | 37 | 28 | | | | | | | | | | | | |
| 09/27/86 | 1205 | 8.2 | | 430 | 0.27 | 41 | 51 | | | | | | | | | | | | |
| 11/04/86 | 0910 | | | | 0.96 | 40 | 40 | | | | | | | | | | | | |
| 12/04/86 | | 7.6 | | | 0.34 | 70 | 74 | 29 | 18 | 54 | 5 | 0 | 99 | 99 | 150 | | | | |
| 01/02/87 | 1210 | 7.9 | | 800 | 0.34 | 80 | 94 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

85 HY* MIN
MED
MAX
DATA

A-35

MINERAL WATER QUALITY DATA

MAP INDEX I-13.....MER513 GARZAS CREEK AT HUNT ROAD (cont.)

| DATE | EC (microhos/cm) | Total Recoverable | | | | | | Total mg/L | Alk | TDS |
|--------|---------------------|-------------------|------|-----|-----|----|----|---------------|-----|-----|
| | | B | Cl | SO4 | Ca | Mg | Na | | | |
| 86 WY* | MIN | 330 | 0.12 | 26 | 28 | 29 | 19 | 46 | 4 | 40 |
| | MED | 800 | 0.49 | 87 | 120 | 32 | 21 | 64 | 4 | 90 |
| | MAX | 1700 | 2.3 | 210 | 230 | 36 | 22 | 82 | 4 | 410 |
| | # DATA | 11 | 11 | 11 | 11 | 2 | 2 | 2 | 2 | 490 |
| 87 WY* | MIN | 800 | 0.34 | 40 | 40 | 29 | 18 | 54 | 5 | 330 |
| | MED | 800 | 0.34 | 70 | 74 | 29 | 18 | 54 | 5 | 350 |
| | MAX | 800 | 0.96 | 80 | 94 | 29 | 18 | 54 | 5 | 350 |
| | # DATA | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 |
| TOTAL | MIN | 330 | 0.12 | 26 | 28 | 29 | 18 | 46 | 4 | 40 |
| | MED | 800 | 0.55 | 87 | 110 | 29 | 19 | 54 | 4 | 90 |
| | MAX | 1700 | 2.3 | 210 | 230 | 36 | 22 | 82 | 5 | 450 |
| | # DATA | 15 | 17 | 17 | 17 | 3 | 3 | 3 | 3 | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

APPENDIX B

Mineral Water Quality Data for Internal Flow Monitoring Stations Listed in Order by Map Index Number

| Map Index | RWCB Site I.D. | Site Name | Page |
|-----------|----------------|--------------------------------------|------|
| T-1 | MER510 | CCID Main @ Russell Avenue | B-2 |
| T-2 | MER511 | CCID Main @ Almond Drive | B-5 |
| T-3 | MER512 | CCID Main @ Gun Club Road | B-7 |
| T-4 | MER540 | Santa Fe Canal @ Hwy 152 | B-9 |
| T-5 | MER519 | Santa Fe Canal @ Henry Miller Rd. | B-11 |
| T-6 | MER517 | Santa Fe Canal @ Gun Club Rd. | B-13 |
| T-7 | MER527 | San Luis Canal @ Hwy 152 | B-15 |
| T-8 | MER514 | Los Banos Creek @ Gun Club Rd. | B-18 |
| T-9 | MER518 | Eagle Ditch | B-20 |
| T-10 | MER516 | Mud Slough (North) @ Gun Club Rd. | B-22 |
| T-11 | MER515 | Fremont Canal @ Gun Club Rd. | B-24 |
| T-12 | MER553 | Gustine Sewage Treatment Plant Ditch | B-26 |

MINERAL WATER QUALITY DATA

MAP INDEX T-1.....MERS10 CCID MAIN CANAL AT RUSSELL AVENUE

LOCATION Latitude 36 55'28", Longitude 120 37'30"
 In SE 1/4, SE 1/4, SE 1/4, Sec. 33, T.11S., R.12E.,
 2.7 miles S of Dos Palos.

| DATE | TIME | pH | EC (microhos/cm) | mg/L | | | | | | Total Recoverable | TDS | |
|----------|------|-----|---------------------|------|------|-----|-----|----|----|----------------------|-----|--|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | | |
| 08/15/85 | 0815 | | | 430 | 0.21 | 65 | 65 | | | | | |
| 08/28/85 | 1305 | 7.8 | | 430 | 0.15 | 72 | 72 | | | | | |
| 09/28/85 | 0955 | | | 540 | 0.23 | 90 | 90 | | | | | |
| 10/31/85 | 0900 | 8.6 | | 600 | 0.31 | 76 | 76 | <2 | | | | |
| 12/07/85 | 1010 | 8.4 | | 770 | 0.63 | 92 | 140 | | | | | |
| 01/04/86 | 0935 | 8.9 | | 2100 | 2.7 | 240 | 560 | | | | | |
| 03/02/86 | 0940 | 8.7 | | 100 | 0.11 | 5 | 5 | | | | | |
| 04/27/86 | 0900 | 8.0 | | 56 | 0.02 | 2 | 2 | | | | | |
| 06/04/86 | 0910 | 7.8 | | 50 | 0.04 | 2 | 2 | | | | | |
| 06/26/86 | 1655 | 8.2 | | 400 | 0.13 | 57 | 59 | | | | | |
| 08/05/86 | 0915 | 8.9 | | 640 | 0.42 | 74 | 84 | | | | | |
| 09/02/86 | 1640 | | | 370 | 0.19 | 49 | 44 | | | | | |
| 09/28/86 | 1025 | 8.7 | | 330 | 0.22 | 42 | 49 | | | | | |
| 11/03/86 | 1105 | | | 0.20 | | 62 | 58 | | | | | |
| 12/04/86 | 1120 | 8.2 | | 0.22 | | 34 | 36 | | | | | |
| 01/03/87 | 0900 | 8.8 | | 520 | 0.31 | 55 | 87 | | | | | |
| 01/30/87 | 1345 | 8.1 | | 450 | 0.28 | 49 | 62 | | | | | |
| 02/27/87 | 1400 | 8.4 | | 717 | 0.54 | 98 | | | | | | |
| 04/01/87 | 1335 | 8.4 | | 1020 | 0.87 | 140 | | | | | | |
| 05/01/87 | 1515 | 9.0 | | 542 | 0.37 | 65 | | | | | | |
| 06/01/87 | 1555 | 7.8 | | 545 | 0.24 | 70 | 60 | | | | | |
| 07/01/87 | 0805 | | | 570 | 0.44 | 78 | | | | | | |
| 07/31/87 | 0850 | 8.2 | | 600 | 0.19 | 60 | 38 | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX T-1.....MER510 CCID MAIN CANAL AT RUSSELL AVENUE (cont.)

MINERAL WATER QUALITY DATA

MAP INDEX T-1.....HER510 CCCD MAIN CANAL AT RUSSELL AVENUE (cont.)

| DATE | EC (µhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Alk | Total | TDS |
|-------|-----------------|------|------|-----------------|-----|----|----|----|-----------------|------------------|-----|-------|-----|
| | | | | | | | | | | | | | |
| TOTAL | MIN | 50 | 0.02 | 2 | <2 | 5 | 2 | 4 | 1 | 0 | 20 | 20 | 34 |
| | MED | 573 | 0.25 | 73 | 53 | 5 | 2 | 7 | 2 | 0 | 80 | 73 | 62 |
| | MAX | 2100 | 3 | 240 | 560 | 18 | 9 | 32 | 3 | <1 | 130 | 150 | 180 |
| | # DATA | 29 | 31 | 30 | 26 | 3 | 3 | 3 | 3 | 10 | 10 | 20 | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-2.....MER511

CCID AT ALMOND DRIVE

LOCATION Latitude 36 59' 60", Longitude 120 49' 02"
 In NW 1/4, NW 1/4, NW 1/4, Sec. 7, T. 11S., R. 11E.,
 1.0 miles E of Mercy Springs Rd., 4.2 miles S of Los Banos.

| DATE | TIME | pH | EC (micro/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS | Total Recoverable | | | |
|----------|------|--------|------------------|------|------|-----------------|-----|----|----|---|-----------------|------------------|-------|-----|-------|-----|-------------------|------|------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L | mg/L | mg/L |
| 08/15/85 | 0640 | | 780 | 0.62 | | 98 | | | | | | | | | | | | | | |
| 08/28/85 | 1645 | 8.0 | 480 | 0.39 | | 79 | | | | | | | | | | | | | | |
| 09/28/85 | 0750 | | 690 | 0.35 | | 110 | | | | | | | | | | | | | | |
| 10/31/85 | 0645 | 8.5 | 620 | 0.34 | | 76 | | | | | | | | | | | | | | |
| 12/07/85 | 0710 | 7.6 | 640 | 0.38 | | 75 | | | | | | | | | | | | | | |
| 01/04/86 | 0715 | 7.6 | 720 | 0.45 | | 98 | | | | | | | | | | | | | | |
| 02/01/86 | 1450 | 8.2 | 910 | 0.30 | | 79 | | | | | | | | | | | | | | |
| 02/16/86 | 1610 | 8.2 | 710 | 0.49 | | 73 | | | | | | | | | | | | | | |
| 03/02/86 | 0730 | 6.8 | 300 | 0.19 | | 16 | | | | | | | | | | | | | | |
| 04/27/86 | 0715 | 5.4 | 87 | 0.04 | | 3 | | | | | | | | | | | | | | |
| 06/04/86 | 0720 | 5.8 | 480 | 0.51 | | 35 | | | | | | | | | | | | | | |
| 06/26/86 | 1515 | 8.2 | 620 | 0.41 | | 71 | | | | | | | | | | | | | | |
| 08/05/86 | 0750 | 8.7 | 460 | 0.30 | | 53 | | | | | | | | | | | | | | |
| 09/02/86 | 1520 | | 390 | 0.20 | | 45 | | | | | | | | | | | | | | |
| 09/28/86 | 0735 | 6.0 | 410 | 0.41 | | 40 | | | | | | | | | | | | | | |
| 11/03/86 | 1220 | | | 0.22 | | 42 | | | | | | | | | | | | | | |
| 01/03/87 | 0720 | 8.3 | 550 | 0.33 | | 49 | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| 85 | WY* | MIN | | 480 | 0.35 | | 79 | | | | | | | | | | | | | |
| | | MED | | 690 | 0.39 | | 98 | | | | | | | | | | | | | |
| | | MAX | | 780 | 0.62 | | 110 | | | | | | | | | | | | | |
| | | # DATA | | 3 | 3 | | 3 | | | | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX T-2.....MER511 CCID AT ALMOND DRIVE (cont.)

| DATE | EC (umhos/cm) | Total Recoverable mg/L..... | | | | | | Total Alk | TDS |
|---------------|------------------|--------------------------------|-----|-----|----|----|----|--------------|-----|
| | | B | Cl | SO4 | Ca | Mg | Na | K | |
| 86 WY* | | | | | | | | | |
| MIN | 87 | 0.04 | 3 | 4 | 6 | 2 | 4 | 1 | 0 |
| MED | 550 | 0.36 | 62 | 83 | 25 | 12 | 45 | 3.5 | 0 |
| MAX | 910 | 0.51 | 98 | 140 | 34 | 18 | 79 | 4 | 0 |
| # DATA | 12 | 12 | 12 | 12 | 4 | 4 | 4 | 4 | 92 |
| 87 WY* | | | | | | | | | |
| MIN | 550 | 0.22 | 42 | 46 | | | | | 68 |
| MED | 550 | 0.28 | 45 | 59 | | | | | 73 |
| MAX | 550 | 0.33 | 49 | 82 | | | | | 78 |
| # DATA | 1 | 2 | 2 | 2 | | | | | 2 |
| TOTAL | | | | | | | | | |
| MIN | 87 | 0.04 | 3 | 4 | 6 | 2 | 4 | 1 | 0 |
| MED | 585 | 0.35 | 71 | 80 | 25 | 12 | 45 | 3.5 | 0 |
| MAX | 910 | 0.62 | 110 | 150 | 34 | 18 | 79 | 4 | 0 |
| # DATA | 16 | 17 | 17 | 17 | 4 | 4 | 4 | 4 | 92 |
| | | | | | | | | | 11 |
| | | | | | | | | | 4 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-3.....MERS512 CCID MAIN CANAL AT GUN CLUB ROAD

LOCATIONLatitude 37 13'54", Longitude 121 00'21"
 In SW 1/4, SE 1/4, SW 1/4, Sec. 17, T.8S., R.9E.,
 0.7 miles E of Hunt Rd. on Gun Club Rd.,
 1.5 miles S of Gustine.

| DATE | TIME | pH | EC (micros/cm) | Total Recoverable | | | | | | Total | TDS | |
|----------|------|-----|-------------------|-------------------|------|-----|-----|----|----|-------|-----|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 |
| 08/14/85 | 1640 | | | 780 | 0.63 | 95 | 130 | | | | | |
| 08/29/85 | 1050 | 8.1 | | 790 | 0.62 | 100 | 140 | | | | | |
| 09/27/85 | 1810 | | | 710 | 0.38 | 100 | 88 | | | | | |
| 10/30/85 | 1530 | 8.6 | | 810 | 0.71 | 120 | 150 | | | | | |
| 12/07/85 | 1715 | 9.3 | | 860 | 0.60 | 110 | 140 | | | | | |
| 01/04/86 | 1720 | 8.6 | | 1060 | 0.67 | 140 | 180 | | | | | |
| 02/16/86 | 1315 | 8.1 | | 510 | 0.19 | 27 | 93 | 37 | 31 | 4 | 0 | 140 |
| 03/01/86 | 1430 | 8.4 | | 780 | 0.49 | 99 | 120 | 36 | 23 | 69 | 4 | 0 |
| 04/26/86 | 1205 | 7.8 | | 180 | 0.11 | 15 | 22 | 12 | 6 | 17 | 2 | 0 |
| 06/03/86 | 1205 | 7.8 | | 310 | 0.36 | 23 | 80 | | | | | 30 |
| 06/26/86 | 1100 | 8.1 | | 680 | 0.58 | 73 | 130 | | | | | 80 |
| 08/04/86 | 1245 | 8.0 | | 380 | 0.15 | 45 | 41 | | | | | 80 |
| 09/02/86 | 1325 | | | 360 | 0.18 | 39 | 32 | | | | | 68 |
| 09/27/86 | 1220 | 8.0 | | 410 | 0.21 | 39 | 41 | | | | | 80 |
| 11/04/86 | 0900 | | | | 0.22 | 57 | 48 | | | | | 72 |
| 12/04/86 | | 7.9 | | | 0.29 | 56 | 61 | 16 | 13 | 50 | 4 | 0 |
| 01/02/87 | 1225 | 8.3 | | 450 | 0.22 | 34 | 56 | | | | | 83 |
| | | | | | | | | | | | | 110 |
| | | | | | | | | | | | | 280 |
| | | | | | | | | | | | | 71 |

| | | | | | | |
|----|----|--------|-----|------|-----|-----|
| 85 | WY | MIN | 710 | 0.38 | 95 | 88 |
| | | MED | 780 | 0.62 | 100 | 130 |
| | | MAX | 790 | 0.63 | 100 | 140 |
| | | # DATA | 3 | 3 | 3 | 3 |

MINERAL WATER QUALITY DATA

MAP INDEX T-3.....MER512 CCID MAIN CANAL AT GUN CLUB ROAD (cont.)

| DATE | (unhos/cm) | Total Recoverable | | | | | | Total mg/L | | | | TDS |
|-------|------------|-------------------|------|------|-----|----|----|------------|---|-----|------|-----|
| | | EC | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | |
| 86 WY | MIN | 180 | 0.11 | 15 | 22 | 12 | 6 | 17 | 2 | 0 | 40 | 30 |
| | MED | 510 | 0.36 | 73 | 120 | 36 | 23 | 39 | 4 | 0 | 110 | 80 |
| | MAX | 1060 | 0.71 | 140 | 180 | 37 | 31 | 69 | 4 | 0 | 140 | 140 |
| | # DATA | 11 | 11 | 11 | 11 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 87 WY | MIN | 450 | 0.22 | 34 | 48 | 16 | 13 | 50 | 4 | 0 | 83 | 71 |
| | MED | 450 | 0.26 | 56.5 | 59 | 26 | 18 | 60 | 4 | 0 | 97 | 78 |
| | MAX | 450 | 0.29 | 99 | 120 | 36 | 23 | 69 | 4 | 0 | 110 | 110 |
| | # DATA | 1 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| TOTAL | MIN | 180 | 0.11 | 15 | 22 | 12 | 6 | 17 | 2 | 0 | 40 | 30 |
| | MED | 680 | 0.37 | 65 | 91 | 36 | 23 | 50 | 4 | 0 | 110 | 80 |
| | MAX | 1060 | 0.71 | 140 | 180 | 37 | 31 | 69 | 4 | 0 | 140 | 140 |
| | # DATA | 15 | 18 | 18 | 18 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-4.....MERS40 SANTA FE CANAL AT HIGHWAY 152

LOCATIONLatitude 37° 03' 22", Longitude 120° 47' 11"
 In SW 1/4, SW 1/4, SE 1/4, Sec. 17, T.10S., R.11E.,
 N side of Hwy. 152, 3.5 miles E of Los Banos.

| DATE | TIME | pH | EC (μmhos/cm) | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS | Total Recoverable | |
|----------|------|-----|------------------|------|-----|------|-----|-----------------|------------------|-------|-----|-------|-----|-------------------|------|
| | | | | | | | | | | | | | | mg/L | mg/L |
| 05/02/85 | 1220 | 8.2 | 2800 | 4.2 | 300 | 786 | | | | | | | | | |
| 06/03/85 | 1135 | | 2000 | 3.0 | 210 | 550 | | | | | | | | | |
| 07/02/85 | 0850 | 7.9 | 2200 | 3.4 | 260 | 560 | | | | | | | | | |
| 08/15/85 | 0910 | | 2000 | 2.4 | 230 | 500 | | | | | | | | | |
| 08/28/85 | 1720 | 7.8 | 1800 | 2.9 | 240 | 550 | | | | | | | | | |
| 09/28/85 | 1045 | | 1080 | 0.99 | 140 | 200 | | | | | | | | | |
| 10/31/85 | 1005 | 8.3 | 1880 | 2.6 | 230 | 498 | | | | | | | | | |
| 12/07/85 | 1205 | 8.0 | 3200 | 4.8 | 390 | 780 | | | | | | | | | |
| 01/04/86 | 1030 | 8.4 | 4000 | 7 | 530 | 1000 | | | | | | | | | |
| 01/14/86 | 1315 | 8.0 | 3200 | 6 | 750 | 1800 | | | | | | | | | |
| 03/02/86 | 1025 | 8.4 | 2800 | 4.7 | 350 | 720 | | | | | | | | | |
| 04/19/86 | 0800 | | 2600 | 4.1 | 330 | 790 | 170 | 61 | 350 | 5 | 0 | 140 | 640 | 2000 | |
| 04/27/86 | 1030 | 8.2 | 2700 | 4.6 | 400 | 860 | 181 | 62 | 372 | 5 | 0 | 120 | 710 | 1700 | |
| 05/13/86 | 0945 | | 2000 | 2.6 | 220 | 570 | 100 | 40 | 240 | 3 | 0 | 90 | 440 | 1300 | |
| 06/04/86 | 1040 | 7.8 | 2200 | 3.6 | 270 | 620 | 160 | 44 | 300 | 5 | 0 | 90 | 530 | 1400 | |
| 06/17/86 | 0910 | | 2300 | 3.3 | 260 | 610 | 160 | 44 | 240 | 4 | 0 | 100 | 550 | 1500 | |
| 06/26/86 | 1830 | 8.0 | 2200 | 3.4 | 260 | 580 | 140 | 83 | 240 | 4 | 0 | 120 | 510 | 1500 | |
| 08/05/86 | 1040 | 7.8 | 2000 | 3.2 | 220 | 560 | | | | | | | | | |
| 09/02/86 | 1400 | | 2000 | 2.8 | 200 | 470 | | | | | | | | | |
| 09/27/86 | 1655 | 6.8 | 1100 | 1.6 | 110 | 280 | | | | | | | | | |
| 11/03/86 | | | | 2.0 | 190 | 340 | | | | | | | | | |
| 12/04/86 | 1320 | 8.0 | | 3.4 | 230 | 610 | 180 | 59 | 340 | 12 | 0 | 130 | 600 | 1900 | |
| 01/03/87 | 0945 | 8.3 | 3000 | 4.4 | 330 | 900 | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX T-4.....MER540 SANTA FE CANAL AT HIGHWAY 152 (cont.)

| DATE | | EC (michos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Alk | Total | TDS |
|----------------|--------|-------------------|------|-----|------|-----|----|-----|-----|-----|------|-----|-------|-----|
| | | | | | | | | | | | | | | |
|mg/L..... | | | | | | | | | | | | | | |
| 85 WY* | MIN | 1080 | 0.99 | 140 | 200 | | | | | | | | | |
| | MED | 2000 | 2.9 | 230 | 550 | | | | | | | | | |
| | MAX | 2800 | 4.2 | 260 | 786 | | | | | | | | | |
| | # DATA | 6 | 6 | 5 | 6 | | | | | | | | | |
| 86 WY* | MIN | 1100 | 1.6 | 110 | 280 | 100 | 40 | 240 | 3 | 0 | 90 | 90 | 1300 | |
| | MED | 2200 | 3.4 | 260 | 610 | 165 | 60 | 320 | 5 | 0 | 120 | 120 | 1600 | |
| | MAX | 4000 | 7 | 750 | 1800 | 181 | 83 | 372 | 12 | 0 | 130 | 210 | 2000 | |
| | # DATA | 13 | 15 | 15 | 15 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | |
| B-10 | MIN | 2300 | 3.3 | 260 | 610 | 160 | 44 | 240 | 4 | 0 | 100 | 100 | 1500 | |
| | MED | 2250 | 4.3 | 305 | 665 | 160 | 56 | 315 | 4.5 | 0 | 120 | 120 | 1750 | |
| | MAX | 2800 | 4.7 | 350 | 720 | 160 | 67 | 390 | 5 | 0 | 140 | 140 | 2000 | |
| | # DATA | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| TOTAL | MIN | 1080 | 0.99 | 110 | 200 | 100 | 40 | 240 | 3 | 0 | 90 | 90 | 1300 | |
| | MED | 2200 | 3.4 | 260 | 580 | 160 | 60 | 320 | 5 | 0 | 120 | 120 | 1600 | |
| | MAX | 4000 | 7 | 750 | 1800 | 181 | 83 | 390 | 12 | 0 | 140 | 210 | 2000 | |
| | # DATA | 21 | 23 | 23 | 23 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-5.....MER519 SANTA FE CANAL AT HENRY MILLER AVENUE

LOCATION Latitude 37° 05' 59", Longitude 120° 49' 44"
 In NW 1/4, NE 1/4, NW 1/4, Sec. 1, T. 10S., R. 10E..
 0.3 miles E of Lander Ave., 3.0 miles N of Gustine.

| DATE | TIME | pH | EC (µmhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS | Total Recoverable | |
|----------|--------|------|------------------|------|------|-----------------|-----|----|------|-----|-----------------|------------------|-------|-----|-------|------|-------------------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L |
| 07/02/85 | 925 | | 2000 | | 2.4 | | 230 | | 550 | | | | | | | | | |
| 08/15/85 | 1005 | | 1800 | | 2.5 | | 210 | | 400 | | | | | | | | | |
| 08/29/85 | 725 | | 1800 | | 2.8 | | 230 | | 510 | | | | | | | | | |
| 09/29/85 | 1135 | | 0840 | | 0.58 | | 110 | | 120 | | | | | | | | | |
| 10/31/85 | 1045 | | 1930 | | 2.8 | | 240 | | 521 | | | | | | | | | |
| 12/07/85 | 1300 | | 3100 | | 4.8 | | 390 | | 870 | | | | | | | | | |
| 01/04/86 | 1130 | | 3600 | | 5.5 | | 470 | | 920 | | | | | | | | | |
| 01/14/86 | 1345 | | 3200 | | 5.1 | | 390 | | 1000 | | | | | | | | | |
| 03/02/86 | 1120 | 8.3 | 2800 | 4.0 | 260 | 600 | 140 | 60 | 360 | 4 | 0 | 140 | 140 | 600 | 600 | 1800 | 1800 | |
| 04/26/86 | 1650 | 7.8 | 2600 | 4.4 | 440 | 940 | 175 | 60 | 356 | 5.3 | 0 | 130 | 130 | 660 | 660 | 1900 | 1900 | |
| 06/03/86 | 1640 | | 2200 | 3.9 | 70 | 700 | | | | | | | | | | | | |
| 06/26/86 | 1435 | | 2400 | 3.1 | 270 | 590 | | | | | | | | | | | | |
| 08/05/86 | 1105 | | 2000 | 2.9 | 210 | 520 | | | | | | | | | | | | |
| 09/02/86 | 1310 | | 1700 | 2.2 | 170 | 390 | | | | | | | | | | | | |
| 09/27/86 | 1635 | | 0560 | 0.77 | 52 | 97 | | | | | | | | | | | | |
| 11/03/86 | 1320 | | | 0.46 | 50 | 75 | | | | | | | | | | | | |
| 12/04/86 | 1350 | 8.00 | | 3.3 | 230 | 580 | 160 | 57 | 360 | 12 | 0 | 160 | 160 | 610 | 610 | 1800 | 1800 | |
| 01/02/87 | 1645 | | 2700 | 3.8 | 270 | 360 | | | | | | | | | | | | |
| 85 WT* | MIN | | 840 | | 0.58 | | 110 | | 120 | | | | | | | | | |
| | MED | | 1800 | | 2.5 | | 220 | | 455 | | | | | | | | | |
| | MAX | | 2000 | | 2.8 | | 230 | | 550 | | | | | | | | | |
| | # DATA | | 4 | | 4 | | 4 | | 4 | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX T-5.....MER519 SANTA FE CANAL AT HENRY MILLER AVENUE (cont.)

| DATE | EC (micros/cm) | mg/L | | | | | | Total Alk | TDS |
|-------------------|-------------------|------|------|-----|------|-----|----|--------------|------|
| | | B | Cl | SO4 | Ca | Mg | Na | | |
| Total Recoverable | | | | | | | | | |
| 86 WY* | MIN | 560 | 0.46 | 50 | 75 | 160 | 57 | 356 | 4 |
| | MED | 2400 | 3.3 | 240 | 580 | 168 | 59 | 358 | 4.7 |
| | MAX | 3200 | 5.1 | 440 | 1000 | 175 | 60 | 360 | 5.3 |
| # DATA | 9 | 11 | 11 | 11 | 2 | 2 | 2 | 2 | 9 |
| 87 WY* | MIN | 1700 | 2.2 | 170 | 390 | 140 | 60 | 360 | 12 |
| | MED | 2800 | 3.8 | 260 | 600 | 140 | 60 | 360 | 12 |
| | MAX | 3600 | 5.5 | 470 | 920 | 140 | 60 | 360 | 12 |
| # DATA | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 2 |
| TOTAL | MIN | 560 | 0.46 | 50 | 75 | 140 | 57 | 356 | 4 |
| | MED | 2100 | 3.0 | 230 | 536 | 160 | 60 | 360 | 5.25 |
| | MAX | 3600 | 5.5 | 470 | 1000 | 175 | 60 | 360 | 12 |
| # DATA | 16 | 18 | 18 | 18 | 3 | 3 | 3 | 3 | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-6.....MER517

SANTA FE CANAL AT GUN CLUB ROAD

LOCATIONLatitude 37 13'53", Longitude 120 54'16"
 In NE 1/4, NE 1/4, Sec. 19, T.8S., R.10E.,
 4.9 miles E of Hunt Rd., 5.4 miles SE of Gustine.

| DATE | TIME | PH | EC (μ mhos/cm) | Total Recoverable mg/L..... | | | | | | Total | Alk | Hard. | TDS |
|----------|------|-----|------------------------|--------------------------------|-----|-----|-----|----|-----|-------|-----|-------|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 06/13/85 | 0915 | 7.6 | 2800 | 4.0 | 310 | 800 | | | | | | | |
| 07/02/85 | 1210 | 8.1 | 2100 | 2.4 | 240 | 520 | | | | | | | |
| 08/14/85 | 1735 | | 1900 | 2.6 | 230 | 410 | | | | | | | |
| 08/29/85 | 1005 | 8.2 | 1700 | 2.2 | 230 | 400 | | | | | | | |
| 09/28/85 | 1410 | | 710 | 0.03 | 110 | 64 | | | | | | | |
| 10/30/85 | 1605 | 8.9 | 1210 | 3.2 | 150 | 211 | | | | | | | |
| 12/07/85 | 1620 | 8.4 | 1660 | 1.7 | 250 | 260 | | | | | | | |
| 01/04/86 | 1435 | 8.8 | 2400 | 2.6 | 330 | 430 | | | | | | | |
| 01/14/86 | 1230 | | 2800 | 1.6 | 380 | 710 | | | | | | | |
| 02/16/86 | 1400 | 8.1 | 2700 | 3.6 | 320 | 730 | 157 | 61 | 335 | 10 | 0 | 170 | 1800 |
| 03/02/86 | 1515 | 8.4 | 860 | 0.97 | 98 | 150 | 41 | 32 | 94 | 4 | 0 | 170 | 530 |
| 04/26/86 | 1245 | 8.2 | 2400 | 3.7 | 310 | 680 | 154 | 55 | 318 | 6 | 0 | 140 | 1700 |
| 06/03/86 | 1245 | 8.0 | 2400 | 4.2 | 290 | 750 | | | | | | | |
| 06/26/86 | 1130 | 8.0 | 2300 | 3.3 | 280 | 570 | | | | | | | |
| 08/04/86 | 1320 | 8.5 | 2000 | 2.7 | 230 | 250 | | | | | | | |
| 09/02/86 | 1350 | | 1700 | 2.0 | 91 | 160 | | | | | | | |
| 09/27/86 | 1300 | 8.1 | 580 | 0.56 | 57 | 62 | | | | | | | |
| 11/04/86 | 0830 | | | 0.96 | 160 | 130 | 51 | 35 | 190 | 8 | 0 | 240 | 240 |
| 12/04/86 | 8.0 | | | 1.2 | 140 | 130 | | | | | | | |
| 01/02/87 | 1310 | 8.8 | 1800 | 1.6 | 220 | 220 | | | | | | | |
| 02/24/88 | | 8.2 | 1250 | 0.90 | 160 | 150 | | | | | | | |
| | | | | | | | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX T-6.....MER517

SANTA FE CANAL AT GUN CLUB ROAD (cont.)

| DATE | | (umhos/cm) | EC | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Alk | Total | TDS | |
|--------|--------|------------|------|------|-----|-----------------|-----|----|-----|----|-----------------|------------------|-----|-------|-----|------|
| | | | | | | | | | | | | | | mg/L | | |
| 85 WY* | MIN | | 710 | 0.03 | 110 | 64 | | | | | | | | | 140 | 110 |
| | MED | | 1900 | 2.4 | 230 | 410 | | | | | | | | | 170 | 1700 |
| | MAX | | 2800 | 4 | 310 | 800 | | | | | | | | | 170 | 1800 |
| | # DATA | | 5 | 5 | 5 | 5 | | | | | | | | | 3 | 3 |
| 86 WY* | MIN | | 580 | 0.56 | 57 | 62 | 41 | 32 | 94 | 4 | 0 | | | | 530 | |
| | MED | | 2150 | 2.7 | 265 | 345 | 154 | 55 | 318 | 6 | 0 | | | | 140 | |
| | MAX | | 2800 | 4.2 | 380 | 750 | 157 | 61 | 335 | 10 | 0 | | | | 300 | |
| | # DATA | | 12 | 12 | 12 | 12 | 3 | 3 | 3 | 3 | 3 | | | | 3 | 3 |
| B-14 | 87 WY* | | 1800 | 0.96 | 140 | 130 | 51 | 35 | 190 | 8 | 0 | | | | 240 | 240 |
| | MIN | | 1800 | 1.2 | 160 | 130 | 51 | 35 | 190 | 8 | 0 | | | | 240 | 240 |
| | MED | | 1800 | 1.6 | 220 | 220 | 51 | 35 | 190 | 8 | 0 | | | | 240 | 240 |
| | MAX | | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | | | | 320 | 320 |
| | # DATA | | | | | | | | | | | | | | 1 | 1 |
| 88 WY* | MIN | | 1250 | 0.9 | 160 | 150 | | | | | | | | | 110 | 530 |
| | MED | | 1250 | 0.9 | 160 | 150 | | | | | | | | | 170 | 1235 |
| | MAX | | 1250 | 0.90 | 160 | 150 | | | | | | | | | 0 | 1800 |
| | # DATA | | 1 | 1 | 1 | 1 | | | | | | | | | 4 | 4 |
| | TOTAL | | | | | | | | | | | | | | 140 | |
| | MIN | | 580 | 0.03 | 57 | 62 | 41 | 32 | 94 | 4 | 0 | | | | 110 | |
| | MED | | 1900 | 2.4 | 230 | 400 | 103 | 45 | 190 | 7 | 0 | | | | 170 | |
| | MAX | | 2800 | 4.2 | 380 | 800 | 157 | 61 | 335 | 10 | 0 | | | | 320 | |
| | # DATA | | 19 | 21 | 21 | 21 | 4 | 4 | 5 | 4 | 4 | | | | 4 | 12 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-7.....MERS27 SAN LUIS CANAL AT HIGHWAY 152

LOCATIONLatitude 36° 03'33", Longitude 120° 48'10"
 In SE 1/4, SW 1/4, Sec. 1/4, T.10S., R.11E.,
 N side of Hwy 152, 2.5 miles E of Los Banos.

| DATE | TIME | pH | EC (microhos/cm) | Total Recoverable | | | | | | Total | Hard. | TDS | |
|----------|------|-----|---------------------|-------------------|-----|-----|-----|----|-----|-------|-------|------|-----|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | |
| 05/02/85 | 1225 | 8.1 | 2000 | 1.8 | 200 | 200 | 420 | | | | | | |
| 06/03/85 | 1145 | | 1800 | 2.3 | 220 | | 670 | | | | | | |
| 07/02/85 | 0910 | 7.8 | 880 | 0.58 | 97 | 200 | 150 | | | | | | |
| 08/15/85 | 0920 | | 1800 | 1.3 | 160 | 320 | | | | | | | |
| 08/28/85 | 1730 | 7.9 | 1300 | 1.6 | 160 | 270 | | | | | | | |
| 09/28/85 | 1055 | | 820 | 0.51 | 120 | 100 | | | | | | | |
| 10/31/85 | 1010 | 8.4 | 900 | 0.78 | 110 | 180 | | | | | | | |
| 12/07/85 | 1215 | 8.2 | 3100 | 4.7 | 340 | 600 | | | | | | | |
| 01/04/86 | 1050 | 8.4 | 2800 | 4.1 | 295 | 570 | | | | | | | |
| 03/02/86 | 1040 | 8.3 | 2300 | 3.5 | 280 | 430 | 50 | 77 | 360 | 3.8 | 16 | 270 | 286 |
| 04/19/86 | 0810 | | 2400 | 3.8 | 260 | 420 | 110 | 84 | 360 | 3.9 | 0 | 440 | 440 |
| 04/27/86 | 1045 | 8.1 | 1200 | 1.4 | 130 | 160 | 54 | 35 | 148 | 11 | 0 | 250 | 320 |
| 05/13/86 | 1000 | | 290 | 0.37 | 17 | 42 | | | | | | | 60 |
| 06/04/86 | 1100 | 7.9 | 760 | 1.1 | 70 | 190 | | | | | | | 120 |
| 06/17/86 | 0920 | | 1100 | 0.94 | 100 | 200 | | | | | | | 200 |
| 06/26/86 | 1845 | 8.0 | 1700 | 2.0 | 180 | 290 | | | | | | | 260 |
| 08/05/86 | 1050 | 9.2 | 1500 | 2.1 | 170 | 260 | | | | | | | 260 |
| 09/02/86 | 1415 | | 700 | 0.59 | 69 | 88 | | | | | | | 110 |
| 09/27/86 | 1710 | 7.8 | 490 | 0.63 | 45 | 74 | | | | | | | 80 |
| 11/03/86 | | | | 0.25 | 47 | 53 | | | | | | | 71 |
| 12/04/86 | 1330 | 7.9 | | 2.6 | 150 | 260 | 70 | 51 | 310 | 11 | 0 | 340 | 340 |
| 01/03/87 | 0955 | 8.3 | 1100 | 5.4 | 260 | 620 | | | | | | | 420 |
| 01/30/87 | 1435 | 8.0 | 3800 | 7.0 | 460 | 910 | | | | | | | 430 |

MINERAL WATER QUALITY DATA

MAP INDEX T-7.....MER527 SAN LUIS CANAL AT HIGHWAY 152 (cont.)

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | Hard. | TDS | Total | | |
|----------|--------|-----|------------------|------|----|-----------------|----|----|----|---|-----------------|------------------|-----------|-------|-----|-------|--|--|
| | | | | | | | | | | | | | mg/L | | | | | |
| 02/27/87 | 1520 | 8.0 | 2630 | 3.8 | | 320 | | | | | | | | | | | | |
| 04/01/87 | 1230 | 7.9 | 3380 | 6.3 | | 380 | | | | | | | | | | | | |
| 05/01/87 | 1635 | 8.4 | 8510 | 0.86 | | 82 | | | | | | | | | | | | |
| 06/01/87 | 1710 | 8.0 | 2640 | 3.9 | | 295 | | | | | | | | | | | | |
| 07/01/87 | 0925 | | 1600 | 2.5 | | 170 | | | | | | | | | | | | |
| 07/31/87 | 1025 | 7.7 | 2100 | 2.5 | | 200 | | | | | | | | | | | | |
| 09/01/87 | 1030 | | 2370 | 3.4 | | 280 | | | | | | | | | | | | |
| 10/01/87 | 1055 | 8.0 | 959 | 0.50 | | 150 | | | | | | | | | | | | |
| 11/03/87 | 1625 | 8.7 | 2950 | 3.6 | | 340 | | | | | | | | | | | | |
| 12/01/87 | 1640 | 7.8 | 2820 | 3.9 | | 300 | | | | | | | | | | | | |
| 01/05/88 | 1150 | 7.9 | 4050 | 5.4 | | 390 | | | | | | | | | | | | |
| 01/27/88 | 1605 | 8.3 | 950 | 0.62 | | 120 | | | | | | | | | | | | |
| 03/09/88 | 1635 | | 1900 | 2.3 | | 210 | | | | | | | | | | | | |
| 03/30/88 | 1630 | 8.2 | 2550 | 3.8 | | 270 | | | | | | | | | | | | |
| 85 WY* | MIN | | 820 | 0.51 | | 97 | | | | | | | | | | | | |
| | MED | | 1550 | 1.4 | | 180 | | | | | | | | | | | | |
| | MAX | | 2000 | 2.3 | | 220 | | | | | | | | | | | | |
| | # DATA | | 6 | 6 | | 6 | | | | | | | | | | | | |
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--------|--------|--|------|------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |
| | MED | | 1200 | 1.4 | | 130 | | | | | | | | | | | | |
| | MAX | | 3100 | 4.7 | | 340 | | | | | | | | | | | | |
| | # DATA | | 13 | 13 | | 13 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 86 WY* | MIN | | 290 | 0.37 | | 17 | | | | | | | | | | | | |

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MINERAL WATER QUALITY DATA

MAP INDEX T-7.....MER527 SAN LUIS CANAL AT HIGHWAY 152 (cont.)

| DATE | | EC (micros/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | Alk | TDS |
|--------|--------|-------------------|-------------------|-----|-----|-----|----|-----|-----|-----|------|-------|------|-----|
| | | | Total Recoverable | | | | | | | | | | | |
| 87 WY* | MIN | 1100 | 0.25 | 47 | 53 | 70 | 51 | 310 | 11 | 0 | 340 | 71 | | |
| | MED | 2630 | 3.4 | 260 | 520 | 70 | 51 | 310 | 11 | 0 | 385 | 292 | | |
| | MAX | 8510 | 7 | 460 | 910 | 70 | 51 | 310 | 11 | 0 | 430 | 430 | | |
| | # DATA | 9 | 11 | 11 | 7 | 1 | 1 | 1 | 1 | 2 | 2 | 6 | | |
| 88 WY* | MIN | 950 | 0.32 | 88 | 72 | | | | | 0 | 90 | 90 | | |
| | MED | 2550 | 2.3 | 210 | 420 | | | | | 0 | 245 | 210 | | |
| | MAX | 4050 | 5.4 | 390 | 880 | | | | | <1 | 460 | 460 | | |
| | # DATA | 7 | 7 | 7 | 7 | | | | | 6 | 6 | 7 | | |
| | TOTAL | 290 | 0.25 | 17 | 42 | 50 | 35 | 148 | 3.8 | 0 | 90 | 60 | 710 | |
| | | 1800 | 2.1 | 180 | 290 | 62 | 64 | 335 | 7.4 | 0 | 280 | 244 | 1500 | |
| | | 8510 | 7 | 460 | 910 | 110 | 84 | 360 | 11 | 16 | 460 | 460 | 1800 | |
| | | 35 | 37 | 37 | 33 | 4 | 4 | 4 | 4 | 11 | 11 | 23 | | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-8.....MERS14 LOS BANOS CREEK AT GUN CLUB ROAD

LOCATIONLatitude 37° 13' 56", Longitude 120° 56' 30"
 In SW 1/4, SE 1/4, SE 1/4, Sec. 14, T.8S., R.9E.,
 2.8 miles E of Hunt Rd., 3.7 miles SE of Gustine.

| DATE | TIME | pH | EC (microhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS | Total Recoverable | |
|----------|------|-----|---------------------|------|-----|-----------------|----|----|-----|----|-----------------|------------------|-------|-----|-------|-----|-------------------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L |
| 07/02/85 | 1300 | 8.4 | 1200 | 1.1 | 150 | 170 | | | | | | | | | | | | |
| 08/14/85 | 1725 | | 2200 | 2.0 | 300 | 420 | | | | | | | | | | | | |
| 08/29/85 | 1035 | 8.8 | 1800 | 1.8 | 270 | 390 | | | | | | | | | | | | |
| 09/27/85 | 1825 | | 750 | 0.80 | 110 | 100 | | | | | | | | | | | | |
| 10/30/85 | 1540 | 8.2 | 770 | 0.51 | 110 | 95 | | | | | | | | | | | | |
| 12/07/85 | 1650 | 8.2 | 2100 | 2.2 | 340 | 280 | | | | | | | | | | | | |
| 01/04/86 | 1510 | 8.8 | 3000 | 3.2 | 530 | 460 | | | | | | | | | | | | |
| 01/14/86 | 1310 | | 2700 | 2.3 | 400 | 410 | | | | | | | | | | | | |
| 02/16/86 | 1330 | 8.2 | 1050 | 0.70 | 130 | 160 | 38 | 30 | 129 | 6 | 0 | 180 | 215 | 340 | 215 | 320 | 625 | |
| 03/01/86 | 1445 | 8.0 | 1800 | 2.1 | 270 | 230 | 54 | 52 | 250 | 10 | 14 | 240 | 254 | 320 | 1150 | 230 | 720 | |
| 04/26/86 | 1220 | 8.2 | 1200 | 1.2 | 170 | 200 | 43 | 38 | 151 | 5 | 0 | 170 | 170 | 190 | | | | |
| 06/03/86 | 1220 | 8.5 | 1300 | 1.5 | 170 | 240 | | | | | | | | | | | | |
| 06/26/86 | 1115 | 8.8 | 1500 | 1.3 | 190 | 270 | | | | | | | | | | | | |
| 08/04/86 | 1305 | 8.8 | 740 | 0.48 | 87 | 100 | | | | | | | | | | | | |
| 09/02/86 | 1340 | | 450 | 0.28 | 180 | 200 | | | | | | | | | | | | |
| 09/27/86 | 1235 | 8.0 | 470 | 0.29 | 44 | 46 | | | | | | | | | | | | |
| 11/04/86 | 0850 | | 0.67 | 89 | 86 | 86 | | | | | | | | | | | | |
| 12/04/86 | | 7.8 | 0.53 | 73 | 72 | 29 | 20 | 69 | 6 | 0 | 130 | 130 | 140 | 370 | | | | |
| 01/02/87 | 1240 | 8.2 | 1750 | 1.6 | 200 | 140 | | | | | | | | | | | | |

B-18
 85 WY* MIN 750 0.80 110 100
 MED 1500 1.5 210 280
 MAX 2200 2.0 300 420
 # DATA 4 4 4 4

MINERAL WATER QUALITY DATA

MAP INDEX T-B.....MER514 LOS BANOS CREEK AT GUN CLUB ROAD (cont.)

| DATE | EC (umhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | Alk | TDS |
|--------|------------------|------------------------|------|-----|-----|----|----|-----|-----|------|-------|-----|------|
| | | Total Recoverable mg/L | | | | | | | | | | | |
| 86 WY* | MIN | 450 | 0.28 | 44 | 46 | 38 | 30 | 129 | 5 | 0 | 170 | 48 | 625 |
| | MED | 1250 | 1.3 | 175 | 215 | 43 | 38 | 151 | 6 | 0 | 180 | 170 | 720 |
| | MAX | 3000 | 3.2 | 530 | 460 | 54 | 52 | 250 | 10 | 14 | 240 | 340 | 1150 |
| | # DATA | 12 | 12 | 12 | 12 | 3 | 3 | 3 | 3 | 3 | 3 | 9 | 3 |
| 87 WY* | MIN | 1750 | 0.53 | 73 | 72 | 29 | 20 | 69 | 6 | 0 | 130 | 130 | 370 |
| | MED | 1750 | 0.67 | 89 | 86 | 29 | 20 | 69 | 6 | 0 | 130 | 160 | 370 |
| | MAX | 1750 | 1.6 | 200 | 140 | 29 | 20 | 69 | 6 | 0 | 130 | 300 | 370 |
| | # DATA | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 |
| TOTAL | MIN | 450 | 0.28 | 44 | 46 | 29 | 20 | 69 | 5 | 0 | 130 | 48 | 370 |
| | MED | 1300 | 1.2 | 170 | 200 | 41 | 34 | 140 | 6 | 0 | 175 | 165 | 672 |
| | MAX | 3000 | 3.2 | 530 | 460 | 54 | 52 | 250 | 10 | 14 | 240 | 340 | 1150 |
| | # DATA | 17 | 19 | 19 | 19 | 4 | 4 | 4 | 4 | 4 | 4 | 12 | 4 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-9.....MER518 EAGLE DITCH AT GUN CLUB ROAD

LOCATIONLatitude 37 13'53", Longitude 120 55'55"
 In SE 1/4, SE 1/4, SW 1/4, Sec. 13, T.8S., R.9E.,
 3.3 miles E of Hunt Road, 200 ft. E of Santa Fe Grade,
 4.2 miles SE of Gustine.

| DATE | TIME | pH | EC (microhos/cm) | mg/L | | | | | | | Total Recoverable | | |
|----------|--------|-----|---------------------|------|-----|-----|----|----|----|---|-------------------|------|-------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total |
| 07/02/85 | 1155 | 8.2 | 2100 | 2.6 | 240 | 510 | | | | | | | |
| 08/14/85 | 1810 | | 1900 | 2.5 | 230 | 440 | | | | | | | |
| 08/29/85 | 0955 | 8.2 | 1800 | 2.4 | 230 | 430 | | | | | | | |
| 09/27/85 | 1840 | | 760 | 0.66 | 120 | 76 | | | | | | | |
| 10/30/85 | 1550 | 8.9 | 1230 | 1.1 | 150 | 260 | | | | | | | |
| 12/07/85 | 1610 | 8.1 | 1480 | 1.5 | 220 | 180 | | | | | | | |
| 01/04/86 | 1425 | 8.6 | 1900 | 1.7 | 260 | 320 | | | | | | | |
| 01/14/86 | 1250 | | 2000 | 1.7 | 270 | 310 | | | | | | | |
| 02/16/86 | 1350 | 8.3 | 2100 | 1.9 | 250 | 260 | | | | | | | |
| 03/02/86 | 1500 | 8.4 | 1900 | 2.3 | 270 | 300 | | | | | | | |
| 04/26/86 | 1230 | 9.0 | 2900 | 3.6 | 480 | 430 | | | | | | | |
| 06/03/86 | 1230 | 8.0 | 1600 | 2.1 | 230 | 320 | | | | | | | |
| 09/27/86 | 1250 | 7.9 | 460 | 0.30 | 44 | 57 | | | | | | | |
| 11/04/86 | 0840 | | | 0.73 | 99 | 66 | | | | | | | |
| 12/04/86 | | 7.7 | | 0.66 | 87 | 78 | | | | | | | |
| 01/02/87 | 1255 | 8.1 | 1200 | 1.2 | 140 | 120 | | | | | | | |
| 02/24/88 | | 8.0 | 1800 | 1.5 | 240 | 240 | | | | | | | |
| | | | | | | | | | | | | | |
| 85 WY* | MIN | | 760 | 0.66 | 120 | 76 | | | | | | | |
| | MED | | 1850 | 2.5 | 230 | 435 | | | | | | | |
| | MAX | | 2100 | 2.6 | 240 | 510 | | | | | | | |
| | # DATA | | 4 | 4 | 4 | 4 | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX T-9.....MERS18 EAGLE DITCH AT GUN CLUB ROAD (cont.)

| DATE | (umhos/cm) | mg/L | | | | | | | | | | Total Alk | TDS |
|-------------------|------------|------|------|-----|-----|-----|-----|-----|-----|-----|------|--------------|------|
| | | EC | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | | |
| Total Recoverable | | | | | | | | | | | | | |
| 86 WY* | MIN | 460 | 0.3 | 44 | 57 | 60 | 49 | 280 | 6 | 0 | 290 | 88 | 1300 |
| | MED | 1900 | 1.7 | 250 | 300 | 62 | 51 | 318 | 8 | 16 | 310 | 308 | 1500 |
| | MAX | 2900 | 3.6 | 480 | 430 | 102 | 80 | 448 | 11 | 53 | 430 | 483 | 1900 |
| | # DATA | 9 | 9 | 9 | 9 | 3 | 3 | 3 | 3 | 3 | 3 | 6 | 3 |
| 87 WY* | MIN | 1200 | 0.66 | 87 | 66 | 35 | 24 | 86 | 7 | 0 | 150 | 150 | 500 |
| | MED | 1200 | 0.73 | 99 | 78 | 35 | 24 | 86 | 7 | 0 | 150 | 210 | 500 |
| | MAX | 1200 | 1.2 | 140 | 120 | 35 | 24 | 86 | 7 | 0 | 150 | 260 | 500 |
| | # DATA | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 |
| 88 WY* | MIN | 1800 | 1.5 | 240 | 240 | 240 | 240 | 250 | 250 | 250 | 250 | 250 | 500 |
| | MED | 1800 | 1.5 | 240 | 240 | 240 | 240 | 250 | 250 | 250 | 250 | 250 | 1400 |
| | MAX | 1800 | 1.5 | 240 | 240 | 240 | 240 | 250 | 250 | 250 | 250 | 250 | 1900 |
| | # DATA | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 |
| TOTAL | MIN | 460 | 0.3 | 44 | 57 | 35 | 24 | 86 | 6 | 0 | 150 | 88 | 500 |
| | MED | 1800 | 1.7 | 230 | 260 | 61 | 50 | 280 | 8 | 8 | 300 | 260 | 1400 |
| | MAX | 2900 | 3.6 | 480 | 50 | 102 | 80 | 448 | 11 | 53 | 430 | 483 | 1900 |
| | # DATA | 15 | 17 | 17 | 17 | 4 | 4 | 5 | 4 | 4 | 4 | 9 | 4 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-10.....MER516 MUD SLOUGH AT GUN CLUB ROAD

LOCATIONLatitude 37 13'53", Longitude 120 53'54"
 In NE 1/4, NW 1/4, NW 1/4, Sec. 20, T.8S., R.10E.,
 5.4 miles E of Hunt Rd., on S side of Gun Club Rd.
 6 miles SE of Gustine.

| DATE | TIME | pH | EC (micros/cm) | Total Recoverable | | | | | | | | TDS |
|----------|------|-----|-------------------|-------------------|------|------|-----|-----|-----|----|-----|-----|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | |
| 07/02/85 | 1250 | 8.8 | 2800 | 3.9 | 330 | 740 | | | | | | |
| 08/14/85 | 1750 | 8.6 | 4900 | 7 | 730 | 1400 | | | | | | |
| 08/29/85 | 1030 | 8.6 | 2000 | 2.8 | 260 | 530 | | | | | | |
| 09/28/85 | 1435 | | 2800 | | 370 | 710 | | | | | | |
| 10/30/85 | 1620 | 8.1 | 1440 | 1.1 | 200 | 258 | | | | | | |
| 12/07/85 | 1630 | 8.4 | 2800 | 2.4 | 390 | 590 | | | | | | |
| 01/04/86 | 1445 | 8.8 | 3500 | 3.2 | 490 | 720 | | | | | | |
| 01/14/86 | 1220 | | 3000 | 3.2 | 380 | 610 | | | | | | |
| 02/16/86 | 1415 | 8.2 | 3200 | 3.9 | 520 | 820 | 105 | 5 | 593 | 7 | 0 | 350 |
| 03/02/86 | 1525 | 8.1 | 1900 | 2.2 | 220 | 260 | 61 | 53 | 300 | 5 | 16 | 240 |
| 04/26/86 | 1255 | 8.7 | 2800 | 3.4 | 470 | 610 | 94 | 72 | 436 | 6 | 0 | 260 |
| 06/03/86 | 1300 | 9.0 | 5000 | 6 | 1000 | 1700 | | | | | | 190 |
| 06/26/86 | 1140 | 8.9 | 2900 | 4.3 | 360 | 780 | | | | | | 90 |
| 08/04/86 | 1330 | 9.5 | 5100 | 7 | 810 | 1500 | | | | | | 76 |
| 11/04/86 | 0820 | | | 1.2 | 250 | 320 | | | | | | 240 |
| 12/04/86 | | 7.8 | | 3.5 | 630 | 870 | 160 | 140 | 700 | 22 | 0 | 350 |
| 01/02/87 | 1315 | 8.1 | 3000 | 2.5 | 310 | 540 | | | | | | 330 |
| 02/24/88 | | 8.1 | 3000 | 2.4 | 380 | 400 | | | | | | 500 |

85 WY* MIN 2000 2.8 260 530
 MED 2800 3.9 350 725
 MAX 4900 7 730 1400
 #DATA 4 3 4 4

MINERAL WATER QUALITY DATA

MAP INDEX T-10.....MERR16 MUD SLOUGH AT GUN CLUB ROAD (cont.)

| DATE | | EC (umhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | Alk | TDS |
|--------|-------|------------------|------------------------------|------|------|-----|-----|-----|-----|-----|------|-------|-----|------|
| | | | Total Recoverable .mg/L..... | | | | | | | | | | | |
| 86 WY* | MIN | 1440 | 1.1 | 200 | 258 | 61 | 5 | 300 | 5 | 0 | 240 | 76 | | 1200 |
| | MED | 2950 | 3.3 | 430 | 665 | 94 | 53 | 436 | 6 | 0 | 260 | 256 | | 1800 |
| | MAX | 5100 | 7 | 1000 | 1700 | 105 | 72 | 593 | 7 | 16 | 350 | 350 | | 2500 |
| | #DATA | 10 | 10 | 10 | 10 | 3 | 3 | 3 | 3 | 3 | 3 | 7 | | 3 |
| 87 WY* | MIN | 3000 | 1.2 | 250 | 320 | 160 | 140 | 700 | 22 | 0 | 350 | 240 | | 2800 |
| | MED | 3000 | 2.5 | 310 | 540 | 160 | 140 | 700 | 22 | 0 | 350 | 330 | | 2800 |
| | MAX | 3000 | 3.5 | 630 | 870 | 160 | 140 | 700 | 22 | 0 | 350 | 350 | | 2800 |
| | #DATA | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | | 1 |
| 88 WY* | MIN | 3000 | 2.4 | 380 | 400 | 400 | 400 | 500 | 500 | 500 | 500 | 500 | | |
| | MED | 3000 | 2.4 | 380 | 400 | 400 | 400 | 500 | 500 | 500 | 500 | 500 | | |
| | MAX | 3000 | 2.4 | 380 | 400 | 400 | 400 | 500 | 500 | 500 | 500 | 500 | | |
| | #DATA | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| TOTAL | MIN | 1440 | 1.1 | 200 | 258 | 61 | 5 | 300 | 5 | 0 | 240 | 76 | | 1200 |
| | MED | 2950 | 3.2 | 380 | 660 | 100 | 63 | 500 | 6.5 | 0 | 305 | 258 | | 2150 |
| | MAX | 5100 | 7 | 1000 | 1700 | 160 | 140 | 700 | 22 | 16 | 350 | 350 | | 2800 |
| | #DATA | 16 | 17 | 18 | 18 | 4 | 4 | 5 | 4 | 4 | 4 | 10 | | 4 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-11.....MER515 FREMONT CANAL AT GUN CLUB ROAD

LOCATIONLatitude 37 13'54", Longitude 120 52'55"
 In SE 1/4, SW 1/4, SE 1/4, Sec. 15, T.8S., R.10E.,
 5.7 miles E of Hunt Rd., N side of Gun Club Rd., SE of Gustine.

| DATE | TIME | pH | EC (microhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|------|-----|---------------------|-------------------|-----|------|-----|----|-----|-------|-----|-------|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 07/02/85 | 1235 | 8.2 | 2300 | 3.2 | 250 | 600 | | | | | | | |
| 08/14/85 | 1715 | | 2000 | 2.2 | 250 | 45 | | | | | | | |
| 08/29/85 | 1015 | 8.1 | 1700 | 2.6 | 240 | 400 | | | | | | | |
| 09/28/85 | 1425 | | 920 | 2.0 | 130 | 150 | | | | | | | |
| 10/30/85 | 1615 | 8.9 | 3200 | 2.8 | 420 | 857 | | | | | | | |
| 12/07/85 | 1640 | 8.5 | 3100 | 4.1 | 420 | 870 | | | | | | | |
| 01/04/86 | 1455 | 8.7 | 4500 | 6.7 | 640 | 1100 | | | | | | | |
| 01/14/86 | 1210 | | 3300 | 5.9 | 400 | 990 | | | | | | | |
| 02/16/86 | 1430 | 8.3 | 2000 | 1.0 | 410 | 570 | 97 | 54 | 383 | 6 | 0 | 190 | 440 |
| 03/01/86 | 1540 | 8.4 | 3200 | 4.4 | 370 | 790 | 160 | 68 | 380 | 5 | 0 | 140 | 1700 |
| 04/26/86 | 1310 | 8.8 | 3100 | 4.5 | 530 | 960 | 119 | 73 | 493 | 7 | 0 | 150 | 1100 |
| 06/03/86 | 1310 | 8.8 | 2100 | 3.5 | 290 | 800 | | | | | | 150 | 540 |
| 06/15/86 | 1235 | | 1840 | 1.8 | 242 | 359 | | | | | | 100 | 1600 |
| 06/26/86 | 1150 | 8.1 | 2600 | 3.6 | 310 | 650 | | | | | | | |
| 08/04/86 | 1340 | 8.4 | 2700 | 4.1 | 340 | 790 | | | | | | | |
| 09/02/86 | 1410 | | 2550 | 3.8 | 280 | 710 | | | | | | | |
| 09/27/86 | 1315 | 8.2 | 1600 | 2.2 | 190 | 410 | | | | | | | |
| 11/04/86 | 0810 | | | 1.0 | 150 | 220 | | | | | | | |
| 12/04/86 | | 8.0 | | 1.5 | 140 | 250 | 90 | 33 | 170 | 10 | 0 | 180 | 120 |
| 01/02/87 | 1325 | 8.6 | 2700 | 3.8 | 260 | 750 | | | | | | | |
| 02/24/88 | | 8.0 | 3350 | 5.0 | 370 | 850 | | | | | | | |
| | | | | | | | | | | | | 440 | |

MINERAL WATER QUALITY DATA

MAP INDEX T-11.....MERS 15

FREMONT CANAL AT GUN CLUB ROAD (cont.)

| DATE | EC (micros/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | Total |
|-------------------|-------------------|------|-----|-----------------|------|-----|----|-----|-----------------|------------------|--------------|-------|
| | | | | | | | | | | | | TDS |
| Total Recoverable | | | | | | | | | | | | |
| 85 WY* | MIN | 920 | 2 | 130 | 45 | | | | | | | |
| | MED | 1850 | 2.4 | 245 | 275 | | | | | | | |
| | MAX | 2300 | 3.2 | 250 | 600 | | | | | | | |
| | # DATA | 4 | 4 | 4 | 4 | | | | | | | |
| 86 WY* | MIN | 1600 | 1 | 190.0 | 359 | 97 | 54 | 380 | 5 | 0 | 140 | 76 |
| | MED | 2700 | 3.8 | 370 | 790 | 119 | 68 | 383 | 6 | 0 | 150 | 120 |
| | MAX | 4500 | 6.7 | 640 | 1100 | 160 | 73 | 493 | 7 | 0 | 190 | 210 |
| | # DATA | 13 | 13 | 13 | 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 87 WY* | MIN | 2700 | 1 | 140 | 220 | 90 | 33 | 170 | 10 | 0 | 180 | 160 |
| | MED | 2700 | 1.5 | 150 | 250 | 90 | 33 | 170 | 10 | 0 | 180 | 160 |
| | MAX | 2700 | 3.8 | 260 | 750 | 90 | 33 | 170 | 10 | 0 | 180 | 180 |
| | # DATA | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 88 WY* | MIN | 3350 | 5 | 370 | 850 | | | 440 | | | | |
| | MED | 3350 | 5 | 370 | 850 | | | 440 | | | | |
| | MAX | 3350 | 5 | 370 | 850 | | | 440 | | | | |
| | # DATA | 1 | 1 | 1 | 1 | | | 1 | | | | |
| TOTAL | MIN | 920 | 1 | 130 | 45 | 90 | 33 | 170 | 5 | 0 | 140 | 76 |
| | MED | 2600 | 3.5 | 290 | 710 | 108 | 61 | 383 | 7 | 0 | 165 | 145 |
| | MAX | 4500 | 6.7 | 640 | 1100 | 160 | 73 | 493 | 10 | 0 | 190 | 210 |
| | # DATA | 19 | 21 | 21 | 21 | 4 | 4 | 5 | 4 | 4 | 4 | 12 |
| | | | | | | | | | | | | 4 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX T-12.....MER553

GUSTINE WASTE WATER TREATMENT PLANT DITCH AT SANTA FE GRADE

LOCATIONLatitude 37 15'37", Longitude 120 57'11"

In SE 1/4, SW 1/4, SW 1/4, Sec. 2, T.8S., R.9E.,

0.8 miles S of Hwy 140 on W side of Santa Fe Grade,
across from Lone Tree Gun Club, 2.2 miles E of Gustine.

| DATE | TIME | pH | EC (umhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|--------|-----|------------------|-------------------|-----|-----|-----|----|-----|-------|------|-------|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 12/18/85 | 0935 | 8.6 | 2800 | 0.78 | 390 | 110 | | | | 0 | 620 | | |
| 01/09/86 | 0835 | 7.7 | 2700 | 1.0 | 350 | 97 | | | | 0 | 1010 | 230 | 2000 |
| 02/01/86 | 1405 | 7.8 | 3600 | 1.9 | 440 | 360 | 120 | 79 | 540 | 63 | 0 | 900 | 650 |
| 02/07/86 | 1205 | 7.8 | 4000 | 1.5 | 490 | 550 | 125 | 85 | 575 | 64 | 0 | 900 | 2300 |
| 02/16/86 | 1455 | 8.0 | 3400 | 1.9 | 320 | 510 | 109 | 94 | 477 | 41 | 0 | 510 | 270 |
| 03/02/86 | 1555 | 8.0 | 3700 | 1.7 | 420 | 450 | 75 | 86 | 550 | 48 | 80 | 660 | 2200 |
| 04/26/86 | 1330 | 8.0 | 3000 | 1.0 | 570 | 55 | 104 | 53 | 462 | 55 | 20 | 770 | 790 |
| 06/03/86 | 1345 | 8.3 | 2600 | 1.3 | 460 | 110 | | | | | | 710 | |
| 06/26/86 | 1215 | 8.2 | 2500 | 1.0 | 380 | 140 | | | | | | 500 | |
| 08/04/86 | 1410 | 8.2 | 2700 | 1.2 | 380 | 240 | | | | | | 690 | |
| 09/02/86 | 1030 | | 3000 | 1.1 | 310 | 120 | | | | | | 630 | |
| 09/27/86 | 1335 | 8.5 | 2700 | 1.8 | 440 | 78 | | | | | | 670 | |
| 11/03/86 | 1520 | | | 0.60 | 220 | 89 | | | | | | 390 | |
| 12/04/86 | | 7.6 | | 0.69 | 135 | 31 | 44 | 28 | 160 | 21 | 0 | 310 | 200 |
| 01/02/87 | 1345 | 7.8 | 2600 | 0.89 | 320 | 130 | | | | | | 680 | |
| 86 WY* | MIN | | 2500 | 0.78 | 310 | 55 | 75 | 53 | 462 | 41 | 0 | 510 | 500 |
| | MED | | 2900 | 1.3 | 405 | 130 | 109 | 85 | 540 | 55 | 0 | 715 | 700 |
| | MAX | | 4000 | 1.9 | 570 | 550 | 125 | 94 | 575 | 64 | 80 | 1010 | 1010 |
| | # DATA | | 12 | 12 | 12 | 5 | 5 | 5 | 5 | 6 | 6 | 10 | 5 |

MINERAL WATER QUALITY DATA

MAP INDEX T-12.....MER553 GUSTINE WASTE WATER TREATMENT PLANT DITCH AT SANTA FE GRADE (cont.)

| DATE | EC (µhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | TDS |
|--------|-----------------|------|------|-----------------|-----|-----|----|-----|-----------------|------------------|-------|------|------|
| | | | | | | | | | | | | | |
| 87 WY* | MIN | 2600 | 0.6 | 135 | 31 | 44 | 28 | 160 | 21 | 0 | 310 | 310 | 640 |
| | MED | 2600 | 0.69 | 220 | 89 | 44 | 28 | 160 | 21 | 0 | 310 | 390 | 640 |
| | MAX | 2600 | 0.89 | 320 | 130 | 44 | 28 | 160 | 21 | 0 | 310 | 680 | 640 |
| | # DATA | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 |
| TOTAL | MIN | 2500 | 0.6 | 135 | 31 | 44 | 28 | 160 | 21 | 0 | 310 | 310 | 640 |
| | MED | 2800 | 1.1 | 380 | 120 | 107 | 82 | 510 | 52 | 0 | 660 | 680 | 2000 |
| | MAX | 4000 | 1.9 | 570 | 550 | 125 | 94 | 575 | 64 | 80 | 1010 | 1010 | 2300 |
| | # DATA | 13 | 15 | 15 | 15 | 6 | 6 | 6 | 7 | 7 | 7 | 13 | 6 |

* Water year: extending from 1 October of one year to 1 October
of the following year

APPENDIX C

Mineral Water Quality Data for Outflow Monitoring Stations Listed in Order by Map Index Number

| Map Index | RWCB Site I.D. | Site Name | Page |
|-----------|----------------|---------------------------------------|------|
| O-1 | MER 551 | Mud Slough (N) @ Newman Gun Club | C-2 |
| O-2 | MER541 | Mud Slough (N) @ Hwy 140 | C-4 |
| O-3 | MER554 | Los Banos Creek @ Hwy 140 | C-7 |
| O-4 | MER531 | Salt Slough @ Lander Avenue | C-9 |
| O-5 | MER530 | Salt Slough @ Wolfsen Road | C-12 |
| O-6 | MER543 | City Ditch | C-15 |
| O-7 | MER548 | Santa Fe Canal - Mud Slough Diversion | C-17 |

MINERAL WATER QUALITY DATA

MAP INDEX 0-1.....MERR551 MUD SLOUGH AT NEWMAN LAND AND CATTLE COMPANY

LOCATIONLatitude 37 18'33", Longitude 120 57'18"
 In NW 1/4, NW 1/4, SW 1/4, Sec. 23, T.7S., R.9E.,
 1.7 miles NE of Santa Fe Grade, 1.2 miles N of Hwy 140,
 4.2 miles NE of Gustine.

| DATE | TIME | pH | EC (umhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | Alk | Hard. | TDS | Total Recoverable | |
|----------|------|-----|------------------|------|-----|-----|-----|----|-----|-----|-----|------|-------|-----|-------|-----|-------------------|------|
| | | | | | | | | | | | | | | | | | mg/L | mg/L |
| 02/01/86 | 1315 | 8.1 | 2800 | 3.5 | 380 | 640 | 142 | 73 | 420 | 11 | 0 | 260 | 260 | 590 | 2000 | | | |
| 03/02/86 | 1330 | 7.7 | 1600 | 1.6 | 160 | 220 | 60 | 43 | 220 | 5.8 | 2 | 175 | 177 | 295 | 1090 | | | |
| 04/26/86 | 1145 | 7.8 | 230 | 0.11 | 20 | 27 | 16 | 8 | 17 | 1.7 | 0 | 45 | 45 | 300 | 140 | | | |
| 06/03/86 | 1120 | 7.8 | 1900 | 2.9 | 250 | 600 | | | | | | | | 110 | | | | |
| 06/26/86 | 1020 | 8.0 | 2600 | 3.5 | 330 | 630 | | | | | | | | 140 | | | | |
| 08/04/86 | 1145 | 6.2 | 1800 | 2.3 | 200 | 400 | | | | | | | | 160 | | | | |
| 09/02/86 | 1240 | | | | | | | | | | | | | 110 | | | | |
| 09/27/86 | 1120 | 8.1 | 1800 | 1.3 | 230 | 260 | | | | | | | | 310 | | | | |
| 11/03/86 | 1545 | | | | | | | | | | | | | 220 | | | | |
| 12/04/86 | | 6.7 | 2600 | 1.9 | 300 | 420 | 90 | 71 | 375 | 17 | 0 | 240 | 240 | 410 | 1550 | | | |
| 01/02/87 | 1140 | 8.0 | 3200 | 0.34 | 280 | 680 | | | | | | | | 300 | | | | |
| 01/30/87 | 955 | 7.9 | 2900 | 2.5 | 320 | 420 | | | | | | | | 310 | | | | |
| 02/27/87 | 955 | 8.2 | 3560 | 4.5 | 510 | | | | | | | | | | | | | |
| 04/01/87 | 1000 | 8.1 | 3310 | 3.9 | 490 | | | | | | | | | | | | | |
| 05/01/87 | 1110 | 8.7 | 2760 | 2.4 | 390 | | | | | | | | | | | | | |
| 06/01/87 | 1200 | 8.3 | 2450 | 2.7 | 307 | 515 | | | | | | | | | | | | |
| 07/01/87 | 1245 | | 2200 | 2.0 | 240 | | | | | | | | | | | | | |
| 07/30/87 | 1430 | 7.6 | 2100 | 2.0 | 220 | 400 | | | | | | | | | | | | |
| 09/01/87 | 1340 | | 2270 | 2.8 | 260 | 480 | | | | | | | | 190 | | | | |
| 10/01/87 | 1330 | 8.0 | 2210 | 2.0 | 300 | 420 | | | | | | | | 180 | | | | |
| 11/03/87 | 1115 | 8.1 | 1350 | 0.91 | 230 | 180 | | | | | | | | 220 | | | | |
| 12/01/87 | 1210 | 7.8 | 2700 | 1.9 | 350 | 420 | | | | | | | | 200 | | | | |
| 01/05/88 | 1145 | | 3150 | 2.2 | 420 | 510 | | | | | | | | 280 | | | | |
| | | | | | | | | | | | | | | 320 | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 0-1.....MER551 MUD SLOUGH AT NEWMAN LAND AND CATTLE COMPANY (cont.)

| DATE | TIME | pH | EC (μ mhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total mg/l | Alk | Hard. | TDS | Total Recoverable | |
|----------|--------|----|------------------------|------|-----|-----------------|-----|----|-----|-----|-----------------|------------------|---------------|-----|-------|-----|-------------------|--|
| | | | | | | | | | | | | | | | | | Total Recoverable | |
| 01/28/88 | 1445 | | 2550 | 2.1 | 340 | 360 | | | | | | | 0 | 320 | 320 | | | |
| 03/09/88 | 1120 | | 3150 | 3.4 | 400 | 710 | | | | | | | <1 | 250 | 250 | | | |
| 03/30/88 | 1125 | | 2850 | 2.8 | 400 | 450 | | | | | | | <1 | 380 | 380 | | | |
| <hr/> | | | | | | | | | | | | | | | | | | |
| 86 WY* | MIN | | 230 | 0.11 | 20 | 27 | 16 | 8 | 17 | 1.7 | 0 | 45 | 45 | | | | 140 | |
| | MED | | 1800 | 2 | 215 | 330 | 60 | 43 | 220 | 5.8 | 0 | 175 | 150 | | | | 1090 | |
| | MAX | | 2800 | 3.5 | 380 | 640 | 142 | 73 | 420 | 11 | 2 | 260 | 310 | | | | 2000 | |
| | # DATA | | 8 | 8 | 8 | 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 8 | | | 3 | |
| <hr/> | | | | | | | | | | | | | | | | | | |
| 87 WY* | MIN | | 1700 | 0.34 | 220 | 340 | 90 | 71 | 375 | 17 | 0 | 240 | 180 | | | | 1550 | |
| | MED | | 2600 | 2.4 | 300 | 420 | 90 | 71 | 375 | 17 | 0 | 275 | 230 | | | | 1550 | |
| | MAX | | 3560 | 4.5 | 510 | 680 | 90 | 71 | 375 | 17 | 0 | 310 | 310 | | | | 1550 | |
| | # DATA | | 11 | 11 | 11 | 7 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | | | 1 | |
| <hr/> | | | | | | | | | | | | | | | | | | |
| 88 WY* | MIN | | 1350 | 0.91 | 230 | 180 | | | | | | 0 | 200 | 200 | | | | |
| | MED | | 2700 | 2.1 | 350 | 420 | | | | | | 0 | 300 | 280 | | | | |
| | MAX | | 3150 | 3.4 | 420 | 710 | | | | | | <1 | 430 | 430 | | | | |
| | # DATA | | 7 | 7 | 7 | 7 | | | | | | 6 | 6 | 6 | | | 7 | |
| <hr/> | | | | | | | | | | | | | | | | | | |
| TOTAL | MIN | | 230 | 0.11 | 20 | 27 | 16 | 8 | 17 | 1.7 | 0 | 45 | 45 | | | | 140 | |
| | MED | | 2360 | 2.2 | 300 | 420 | 75 | 57 | 300 | 8.4 | 0 | 260 | 220 | | | | 1320 | |
| | MAX | | 3560 | 4.5 | 510 | 710 | 142 | 73 | 420 | 17 | 2 | 430 | 430 | | | | 200 | |
| | # DATA | | 26 | 26 | 26 | 22 | 4 | 4 | 4 | 4 | 11 | 11 | 11 | 21 | | | 4 | |

* Water year: extending from 1 October of one year to 1 October of the following year

MINERAL WATER QUALITY DATA

MAP INDEX 0-2.....MERS41 MUD SLOUGH (NORTH) AT HWY 140

LOCATIONLatitude 37°17'28", Longitude 120°56'34"
 NW 1/4, SE 1/4, SE 1/4, Sec. 26, T.7S., R.9E.,
 1.7 miles NE of the Santa Fe-Hwy 140 intersection.

| DATE | TIME | pH | EC (microhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | Hard. | TDS | |
|----------|------|-----|---------------------|-----|-----|-----------------|-----|-----|-----|----|-----------------|------------------|-------|-----|-------|------|------|
| | | | | | | | | | | | | | | | | | |
| 05/02/85 | 1455 | 6.9 | 3100 | 3.1 | 400 | 740 | | | | | | | | | | | |
| 06/03/85 | 1355 | | 3100 | 4.2 | 350 | 840 | | | | | | | | | | | |
| 07/02/85 | 1135 | 8.2 | 2200 | 3.1 | 260 | 550 | | | | | | | | | | | |
| 08/14/85 | 1840 | | 2100 | 3.1 | 260 | 500 | | | | | | | | | | | |
| 08/29/85 | 0940 | 8.4 | 1800 | 2.4 | 240 | 430 | | | | | | | | | | | |
| 09/28/85 | 1345 | | 2300 | 2.0 | 350 | 450 | | | | | | | | | | | |
| 10/30/85 | 1650 | 8.0 | 1390 | 1.1 | 180 | 268 | | | | | | | | | | | |
| 12/07/85 | 1555 | 8.2 | 1930 | 1.9 | 280 | 340 | | | | | | | | | | | |
| 12/18/85 | 0855 | 8.4 | 3100 | 3.3 | 430 | 1220 | | | | | | | | | | | |
| 01/04/86 | 1405 | 8.6 | 3700 | 4.8 | 570 | 950 | | | | | | | | | | | |
| 01/09/86 | 1015 | 7.9 | 3300 | 3.2 | 440 | 720 | | | | | | | | | | | |
| 01/14/86 | 1350 | | 3100 | 3.0 | 430 | 680 | 130 | 76 | 460 | 8 | 8 | 300 | | 290 | | 2000 | |
| 02/07/86 | 1130 | 8.0 | 3400 | 3.2 | 530 | 780 | 132 | 92 | 554 | 8 | 0 | 330 | | 330 | | 690 | 2300 |
| 02/16/86 | 1510 | 8.0 | 2700 | 3.1 | 320 | 660 | 105 | 59 | 380 | 9 | 0 | 240 | | 240 | | 540 | 1900 |
| 03/01/86 | 1615 | 8.0 | 1400 | 1.5 | 170 | 230 | 54 | 36 | 150 | 4 | 0 | 130 | | 130 | | 250 | 840 |
| 04/26/86 | 1410 | 8.0 | 1300 | 1.4 | 190 | 300 | 68 | 30 | 164 | 4 | 0 | 94 | | 94 | | 280 | 760 |
| 05/13/86 | 1230 | | 2400 | 2.8 | 190 | 800 | | | | | | | | | | | |
| 06/03/86 | 1405 | 8.2 | 2100 | 3.7 | 280 | 690 | | | | | | | | | | | |
| 06/16/86 | 1540 | | 2300 | 3.1 | 270 | 630 | | | | | | | | | | | |
| 06/26/86 | 1230 | 8.0 | 2500 | 3.5 | 300 | 590 | | | | | | | | | | | |
| 08/04/86 | 1425 | 8.5 | 1900 | 2.7 | 230 | 480 | | | | | | | | | | | |
| 09/02/86 | 1050 | | 1800 | 2.1 | 210 | 370 | | | | | | | | | | | |
| 09/27/86 | 1355 | 8.5 | 2200 | 2.4 | 290 | 98 | | | | | | | | | | | |
| 11/03/86 | 1500 | | | 1.6 | 270 | 460 | | | | | | | | | | | |
| 12/04/86 | 7.7 | | | 2.6 | 450 | 600 | 110 | 100 | 480 | 19 | 0 | 270 | | 270 | | 530 | 2100 |

C-4

MINERAL WATER QUALITY DATA

MAP INDEX 0-2.....MER541 MUD SLough (NORTH) AT Hwy 140 (cont.)

| DATE | TIME | pH | EC (umhos/cm) | mg/L | | | | | | Total HCO3 | Alk | Hard. | TDS |
|----------|------|-----|------------------|------|------|-----|----|----|----|---------------|-----|-------|-----|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 01/02/87 | 1410 | 8.0 | 3400 | 2.8 | 300 | 700 | | | | 0 | 310 | 310 | 300 |
| 01/30/87 | 1035 | 8.0 | 2800 | 2.8 | | | | | | | | | |
| 02/27/87 | 1030 | 8.2 | 3830 | 5.1 | 550 | | | | | | | | |
| 04/01/87 | 1035 | 8.2 | 3320 | 4.0 | 480 | | | | | | | | |
| 05/01/87 | 1145 | 8.0 | 6620 | 5.6 | 1080 | | | | | | | | |
| 06/01/87 | 1240 | 8.0 | 2620 | 3.5 | 337 | 610 | | | | | | | |
| 06/15/87 | 1225 | | 3030 | 4.7 | 377 | 816 | | | | | | | |
| 07/01/87 | 1210 | | 1800 | 1.7 | 220 | | | | | | | | |
| 07/15/87 | 1145 | | 2400 | 3.2 | 360 | | | | | | | | |
| 07/31/87 | 1305 | 7.8 | 2200 | 3.0 | 240 | 460 | | | | | | | |
| 08/17/87 | 1350 | | 2580 | 3.3 | 280 | 540 | | | | | | | |
| 09/01/87 | 1315 | | 2290 | 3.0 | 280 | 500 | | | | | | | |
| 09/18/87 | 1050 | 8.4 | 2070 | 2.2 | 280 | 440 | | | | | | | |
| 10/01/87 | 1300 | 7.9 | 1850 | 1.5 | 260 | 260 | | | | | | | |
| 10/15/87 | 0945 | 6.8 | 1880 | 1.2 | 260 | 320 | | | | | | | |
| 11/03/87 | 1150 | 8.0 | 1550 | 1.1 | 250 | 190 | | | | | | | |
| 11/17/87 | 1120 | 8.0 | 1890 | 1.4 | 280 | 260 | | | | | | | |
| 12/01/87 | 1240 | 7.7 | 2840 | 2.0 | 370 | 470 | | | | | | | |
| 12/14/87 | 1100 | 8.1 | 2700 | 2.0 | 360 | 400 | | | | | | | |
| 01/05/88 | 1220 | | 3250 | 2.5 | 450 | 510 | | | | | | | |
| 01/15/88 | 1135 | | 2900 | 2.5 | 390 | 510 | | | | | | | |
| 01/28/88 | 1410 | | 2650 | 2.2 | 350 | 360 | | | | | | | |
| 02/16/88 | 1120 | | 3450 | 3.3 | 470 | 710 | | | | | | | |
| 02/24/88 | | | 3200 | | | | | | | | | | |
| 03/02/88 | 1100 | | 2300 | 1.9 | 300 | 400 | | | | | | | |
| 03/09/88 | 1200 | | 3050 | 3.3 | 410 | 700 | | | | | | | |
| 03/18/88 | | | 3300 | 2.3 | 410 | 570 | | | | | | | |
| 03/24/88 | 0945 | | 2750 | 2.9 | 360 | 490 | | | | | | | |
| 03/30/88 | 1155 | | 2600 | 2.6 | 360 | 460 | | | | | | | |

MINERAL WATER QUALITY DATA

MAP INDEX 0-2.....MER541 MUD SLOUGH (NORTH) AT HWY 140 (cont.)

| DATE | EC (umhos/cm) | Total Recoverable | | | | | | TDS | | | | |
|--------|------------------|-------------------|-----|------|------|-----|-----|-----|-----|------|-----|-------|
| | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Alk | Total |
| 85 WY* | MIN | 1300 | 2 | 240 | 430 | | | | | | | |
| | MED | 2600 | 3.1 | 305 | 525 | | | | | | | |
| | MAX | 3100 | 4.2 | 400 | 840 | | | | | | | |
| | # DATA | 6 | 6 | 6 | 6 | | | | | | | |
| 86 WY* | MIN | 1300 | 1.1 | 170 | 98 | 54 | 30 | 150 | 4 | 0 | 94 | 94 |
| | MED | 2300 | 3.0 | 280 | 630 | 105 | 59 | 380 | 8 | 0 | 240 | 149 |
| | MAX | 3700 | 4.8 | 570 | 1220 | 132 | 92 | 554 | 9 | 8 | 330 | 330 |
| | # DATA | 17 | 17 | 17 | 17 | 5 | 5 | 5 | 5 | 5 | 12 | 5 |
| C-6 | MIN | 1800 | 1.6 | 220 | 440 | 110 | 100 | 480 | 19 | 0 | 270 | 130 |
| | MED | 2620 | 3.0 | 320 | 540 | 110 | 100 | 480 | 19 | 0 | 290 | 200 |
| | MAX | 6620 | 5.6 | 1080 | 700 | 110 | 100 | 480 | 19 | 0 | 310 | 310 |
| | # DATA | 13 | 15 | 14 | 9 | 1 | 1 | 1 | 1 | 2 | 2 | 8 |
| 87 WY* | MIN | 1550 | 1.1 | 250 | 190 | | | | | 0 | 200 | 200 |
| | MED | 2750 | 2.3 | 360 | 480 | | | | | 0 | 290 | 285 |
| | MAX | 3450 | 3.3 | 470 | 710 | | | | | <1 | 330 | 330 |
| | # DATA | 17 | 16 | 16 | 16 | | | | | 14 | 14 | 16 |
| TOTAL | MIN | 1300 | 1.1 | 170 | 98 | 154 | 30 | 150 | 4 | 0 | 94 | 94 |
| | MED | 2600 | 2.8 | 320 | 510 | 108 | 68 | 420 | 8 | 0 | 290 | 220 |
| | MAX | 6620 | 5.6 | 1080 | 1220 | 132 | 100 | 554 | 19 | 8 | 330 | 330 |
| | # DATA | 53 | 54 | 53 | 48 | 6 | 6 | 6 | 6 | 21 | 21 | 36 |

* Water year: extending from 1 October of one year to 1 October of the following year

760
1900
2300
5
1
2100
2100
2100
2100
285
330
16
94
220
330
36
6

MINERAL WATER QUALITY DATA

MAP INDEX 0-3.....MERR554 LOS BANOS CREEK AT HIGHWAY 140

LOCATION Latitude 37 16'35", Longitude 120 57'14"
 In NE 1/4, SW 1/4, Sec. 35, T.7S., R.9E.,
 S side of Hwy 140, 2.7 miles NE of Gustine.

| DATE | TIME | pH | EC (umhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|------|-----|------------------|-------------------|-----|------|----|----|-----|-------|-----|-------|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 12/18/85 | 0915 | 8.3 | 2600 | 2.3 | 430 | 170 | | | | 0 | 520 | 430 | 1600 |
| 01/09/86 | 1035 | 8.2 | 3600 | 2.4 | 460 | 620 | | | | | | | |
| 01/14/86 | 1340 | 8.1 | 2700 | 1.4 | 340 | 300 | 80 | 62 | 400 | 38 | | | |
| 02/07/86 | 1140 | 8.3 | 3000 | 2.9 | 470 | 460 | 91 | 78 | 465 | 11 | 0 | 420 | 560 |
| 04/19/86 | 1030 | 8.0 | 1300 | 1.6 | 190 | 200 | 40 | 38 | 200 | 6.2 | 0 | 210 | 260 |
| 01/30/87 | 1020 | 8.0 | 2400 | 2.1 | 250 | 280 | | | | 0 | 330 | 330 | 840 |
| 02/27/87 | 1020 | 8.3 | 2670 | 2.5 | 460 | | | | | | | | |
| 04/01/87 | 1025 | 8.0 | 3350 | 4.2 | 540 | | | | | | | | |
| 05/01/87 | 1140 | 8.3 | 2300 | 2.0 | 250 | | | | | | | | |
| 06/01/87 | 1230 | 7.6 | 1320 | 1.1 | 171 | 250 | | | | | | | |
| 07/01/87 | 1220 | | 1300 | 0.94 | 140 | | | | | | | | |
| 07/31/87 | 1315 | 7.4 | 1200 | 0.60 | 130 | 130 | | | | | 170 | | |
| 09/01/87 | 1325 | | 1410 | 0.84 | 180 | 180 | | | | | 220 | | |
| 10/01/87 | 1315 | 8.0 | 2040 | 2.9 | 240 | 460 | | | | | 130 | | |
| 11/03/87 | 1135 | 8.0 | 1100 | 0.52 | 200 | 77 | | | | | | 190 | |
| 12/01/87 | 1230 | 7.7 | 1480 | 0.82 | 210 | 130 | | | | | | 220 | |
| 01/05/88 | 1210 | | 2200 | 1.3 | 420 | 320 | | | | | | 260 | |
| 01/28/88 | 1300 | | 1900 | 1.3 | 270 | 230 | | | | | | 250 | |
| 03/09/88 | 1140 | | 7450 | 6.6 | 830 | 2300 | | | | | | 480 | |
| 03/30/88 | 1150 | 8.5 | 2850 | 2.8 | 420 | 350 | | | | | | 430 | |

MINERAL WATER QUALITY DATA

MAP INDEX 0-3.....MERR554 LOS BANDS CREEK AT HIGHWAY 140 (cont.)

| DATE | EC (unhos/cm) | Total Recoverable | | | | | | | | | | Total Alk | TDS |
|--------|------------------|-------------------|------|-----|------|----|----|-----|-----|------|-------|--------------|------|
| | | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | | |
| 86 WY* | MIN | 1300 | 1.4 | 190 | 170 | 40 | 38 | 200 | 6.2 | 0 | 210 | 210 | 840 |
| | MED | 2200 | 2.3 | 430 | 300 | 80 | 62 | 400 | 11 | 0 | 420 | 420 | 1600 |
| | MAX | 3600 | 2.9 | 470 | 620 | 91 | 78 | 465 | 38 | 0 | 520 | 430 | 1900 |
| | # DATA | 5 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 87 WY* | MIN | 1200 | 0.6 | 130 | 130 | | | | | | 0 | 330 | 170 |
| | MED | 1855 | 1.6 | 215 | 215 | | | | | | 0 | 330 | 220 |
| | MAX | 3350 | 4.2 | 540 | 280 | | | | | | 0 | 330 | 330 |
| | # DATA | 8 | 8 | 8 | 4 | | | | | | 1 | 1 | 3 |
| 88 WY* | MIN | 1100 | 0.52 | 200 | 77 | | | | | | 0 | 190 | 130 |
| | MED | 2040 | 1.3 | 270 | 320 | | | | | | 0 | 255 | 250 |
| | MAX | 7500 | 6.6 | 830 | 2300 | | | | | | <1 | 480 | 480 |
| | # DATA | 7 | 7 | 7 | 7 | | | | | | 6 | 6 | 7 |
| TOTAL | MIN | 1100 | 0.52 | 130 | 77 | 40 | 38 | 200 | 6.2 | 0 | 190 | 130 | 840 |
| | MED | 2250 | 1.8 | 260 | 265 | 80 | 62 | 400 | 11 | 0 | 280 | 250 | 1600 |
| | MAX | 7450 | 6.6 | 830 | 2300 | 91 | 78 | 465 | 38 | <1 | 520 | 480 | 1900 |
| | # DATA | 20 | 20 | 20 | 16 | 3 | 3 | 3 | 3 | 10 | 10 | 13 | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

MINERAL WATER QUALITY DATA

MAP INDEX O-4.....MER331 SALT SLOUGH AT LANDER AVE. (HWY 165)

LOCATIONLatitude 37 14' 55", Longitude 120 51' 04"
 NW 1/4, SE 1/4, SE 1/4, Sec. 10, T.8S., R.10E.,
 Lander Ave 13.0 miles N of Los Banos and 5.0 miles S of Hwy 140.

| DATE | TIME | pH | EC (micros/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Hard. | TDS | Total Recoverable | |
|----------|------|-----|-------------------|------|-----|-----------------|-----|-----|-----|----|-----------------|------------------|-------|-------|------|-------------------|-----|
| | | | | | | | | | | | | | | | | mg/L | |
| 05/02/85 | 1425 | 8.0 | 1850 | 1.4 | 240 | 740 | | | | | | | | | | | |
| 06/03/85 | 1315 | | 1250 | 1.1 | 210 | 240 | | | | | | | | | | | |
| 07/02/85 | 1055 | 7.7 | 1170 | 0.97 | 150 | 190 | | | | | | | | | | | |
| 08/15/85 | 1140 | | 1300 | 0.94 | 180 | 200 | | | | | | | | | | | |
| 08/29/85 | 0900 | 7.8 | 1000 | 0.65 | 170 | 170 | | | | | | | | | | | |
| 09/28/85 | 1305 | | 1250 | 0.68 | 190 | 150 | | | | | | | | | | | |
| 10/31/85 | 1235 | 8.1 | 1610 | 1.3 | 240 | 240 | | | | | | | | | | | |
| 12/07/85 | 1515 | 8.1 | 2650 | 2.8 | 390 | 570 | | | | | | | | | | | |
| 12/18/85 | 0750 | 7.6 | 2700 | 1.7 | 480 | 400 | | | | | | | | | | | |
| 01/04/86 | 1315 | 8.4 | 3300 | 3.6 | 480 | 790 | | | | | | | | | | | |
| 01/05/86 | 0925 | 7.5 | 3300 | 3.5 | 450 | 750 | | | | | | | | | | | |
| 01/14/86 | 1450 | | 3100 | 3.6 | 460 | 680 | 120 | 55 | 410 | 7 | 0 | 230 | 240 | 2100 | | | |
| 02/07/86 | 1040 | 7.9 | 3000 | 3.7 | 410 | 190 | 70 | 395 | 6 | 0 | 190 | 190 | 770 | 2200 | | | |
| 02/17/86 | 0840 | 7.8 | 2400 | 2.5 | 270 | 450 | 142 | 56 | 250 | 8 | 0 | 160 | 160 | 560 | 2000 | | |
| 03/01/86 | 1710 | 8.0 | 2300 | 2.6 | 330 | 510 | 110 | 56 | 240 | 5 | 0 | 170 | 170 | 480 | 1500 | | |
| 04/26/86 | 1455 | 7.7 | 1200 | 1.1 | 190 | 250 | 74 | 31 | 143 | 5 | 0 | 110 | 110 | 270 | 710 | | |
| 05/13/86 | 1130 | | 900 | 0.43 | 130 | 144 | | | | | | | | | | | 100 |
| 06/03/86 | 1455 | 7.7 | 780 | 0.55 | 100 | 150 | | | | | | | | | | | 80 |
| 06/16/86 | 1630 | | 870 | 0.50 | 100 | 150 | | | | | | | | | | | 118 |
| 06/26/86 | 1310 | 7.7 | 1120 | 0.71 | 140 | 160 | | | | | | | | | | | 110 |
| 08/04/86 | 1515 | 8.8 | 1000 | 0.92 | 130 | 200 | | | | | | | | | | | 120 |
| 09/02/86 | 1130 | | 1400 | 1.3 | 140 | 240 | | | | | | | | | | | 120 |
| 09/27/86 | 1445 | 7.8 | 1100 | 0.95 | 110 | 190 | | | | | | | | | | | 120 |
| 11/03/86 | 1445 | | | | | | | | | | | | | | | | 130 |
| 12/04/86 | | 7.8 | | 2.0 | 250 | 390 | 120 | 50 | 240 | 12 | 0 | 170 | 170 | 450 | 1300 | | |

MINERAL WATER QUALITY DATA

MAP INDEX 0-4.....MER531 SALT SLOUGH AT LANDER AVE. (Hwy 165) (cont.)

| DATE | TIME | PH | EC (microhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|------|-----|---------------------|-------------------|-----|-----|----|----|----|-------|-----|-------|-----|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 01/02/87 | 1455 | 7.9 | 2500 | 2.4 | 270 | 510 | | | | 0 | 190 | 180 | |
| 01/30/87 | 1110 | 7.7 | 2600 | 3.3 | 360 | 550 | | | | | | 190 | |
| 02/27/87 | 1110 | 7.7 | 2950 | 3.5 | 420 | | | | | | | | |
| 04/01/87 | 1110 | 7.8 | 2240 | 2.1 | 310 | | | | | | | | |
| 05/01/87 | 1230 | 8.2 | 1570 | 1.4 | 220 | | | | | | | | |
| 06/01/87 | 1310 | 7.3 | 1570 | 1.5 | 201 | 370 | | | | | | | |
| 06/15/87 | 1300 | | 1720 | 1.7 | 253 | 363 | | | | | | | |
| 07/01/87 | 1125 | | 1900 | 2.2 | 220 | | | | | | | | |
| 07/15/87 | 1235 | | 1700 | 1.6 | 250 | | | | | | | | |
| 07/31/87 | 1230 | 7.2 | 1500 | 0.94 | 170 | 230 | | | | | | 130 | |
| 08/17/87 | 1440 | | 1430 | 0.90 | 180 | 180 | | | | | | 140 | |
| 09/01/87 | 1225 | | 1400 | 0.98 | 190 | 210 | | | | | | 140 | |
| 09/18/87 | 1130 | 7.7 | 2030 | 1.8 | 300 | 340 | | | | | | 170 | |
| 10/01/87 | 1220 | 7.7 | 1920 | 1.6 | 260 | 320 | | | | | | 160 | |
| 10/15/87 | 1025 | 6.8 | 1480 | 0.66 | 210 | 190 | | | | | | 160 | |
| 11/03/87 | 1225 | 8.2 | 1900 | 1.9 | 260 | 330 | | | | | | 170 | |
| 11/17/87 | 1230 | 7.8 | 1687 | 1.0 | 270 | 240 | | | | | | 170 | |
| 12/01/87 | 1330 | 7.5 | 2690 | 2.8 | 350 | 520 | | | | | | 220 | |
| 12/14/87 | 1145 | 7.8 | 3200 | 3.4 | 450 | 660 | | | | | | 240 | |
| 01/05/88 | 1300 | | 3700 | 3.8 | 480 | 760 | | | | | | 230 | |
| 01/15/88 | 1045 | 7.8 | 3450 | 3.9 | 480 | 840 | | | | | | 230 | |
| 01/27/88 | 1735 | 7.6 | | 2.0 | 480 | 520 | | | | | | 280 | |
| 01/28/88 | 1330 | | 3600 | 3.9 | 440 | 790 | | | | | | 220 | |
| 02/16/88 | 1210 | 8.1 | 2700 | 3.0 | 350 | 630 | | | | | | 180 | |
| 03/02/88 | 1150 | 8.2 | 2050 | 2.5 | 270 | 430 | | | | | | 150 | |
| 03/09/88 | 1240 | | 2300 | 2.1 | 290 | 490 | | | | | | 170 | |
| 03/18/88 | | 8.8 | 2100 | 1.7 | 260 | 390 | | | | | | 160 | |
| 03/24/88 | 0840 | 7.0 | 2350 | 2.2 | 320 | 480 | | | | | | 180 | |
| 03/30/88 | 1225 | 7.9 | 2500 | 2.5 | 330 | 540 | | | | | | 180 | |

C-10

MINERAL WATER QUALITY DATA

MAP INDEX 0-4.....MER531 SALT SLOUGH AT LANDER AVE. (HWY 165) (cont..)

| DATE | EC (umhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|--------|------------------|-------------------|------|-----|-----|-----|----|-------|-----|-------|-----|
| | | B | Cl | SO4 | Ca | Mg | Na | K | | | |
| 85 WY* | MIN | 1000 | 0.65 | 150 | 150 | | | | | | |
| | MED | 1250 | 0.96 | 185 | 195 | | | | | | |
| | MAX | 1850 | 1.4 | 240 | 740 | | | | | | |
| | # DATA | 6 | 6 | 6 | 6 | | | | | | |
| 86 WY* | MIN | 780 | 0.43 | 100 | 144 | 74 | 31 | 143 | 5 | 0 | 110 |
| | MED | 1610 | 1.3 | 240 | 245 | 120 | 56 | 250 | 6 | 0 | 170 |
| | MAX | 3300 | 3.7 | 480 | 790 | 190 | 70 | 410 | 8 | 0 | 230 |
| | # DATA | 17 | 17 | 17 | 16 | 5 | 5 | 5 | 5 | 5 | 240 |
| 87 WY* | MIN | 1400 | 0.9 | 170 | 180 | 120 | 50 | 240 | 12 | 0 | 170 |
| | MED | 1720 | 1.7 | 250 | 350 | 120 | 50 | 240 | 12 | 0 | 180 |
| | MAX | 2950 | 3.5 | 420 | 550 | 120 | 50 | 240 | 12 | 0 | 190 |
| | # DATA | 13 | 15 | 15 | 10 | 1 | 1 | 1 | 1 | 2 | 2 |
| 88 WY* | MIN | 1480 | 0.66 | 210 | 190 | | | | 0 | 150 | 150 |
| | MED | 2575 | 2.5 | 350 | 520 | | | | 0 | 180 | 180 |
| | MAX | 3700 | 3.9 | 480 | 840 | | | | <1 | 280 | 280 |
| | # DATA | 16 | 17 | 17 | 17 | | | | 15 | 15 | 17 |
| TOTAL | MIN | 780 | 0.43 | 100 | 144 | 74 | 31 | 143 | 5 | 0 | 110 |
| | MED | 1910 | 1.7 | 260 | 370 | 120 | 56 | 245 | 7 | 0 | 180 |
| | MAX | 3700 | 3.9 | 480 | 840 | 190 | 70 | 410 | 12 | <1 | 280 |
| | # DATA | 52 | 55 | 55 | 49 | 6 | 6 | 6 | 6 | 22 | 22 |

* Water year: extending from 1 October of one year to 1 October of the following year

MINERAL WATER QUALITY DATA

MAP INDEX 0-5.....MER530 SALT SLOUGH AT WOLFSEN ROAD (SAN LUIS RANCH)

LOCATION Latitude 37° 09' 33", Longitude 120° 48' 40"
 SE 1/4, SW 1/4, Sec. 7, T.9S., R.11E.,
 0.9 miles from first bridge on Wolfsen Road.

| DATE | TIME | pH | EC (mhos/cm) | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | Hard. | TDS | Total Recoverable |
|----------|------|-----|-----------------|------|-----------------|-----|-----|-----|-----|-----------------|------------------|--------------|-------|------|----------------------|
| | | | | | | | | | | | | | | | mg/L |
| 05/02/85 | 1410 | 7.9 | 1650 | 1.2 | 210 | 210 | | | | | | | | | 320 |
| 06/03/85 | 1220 | | 1200 | 1.1 | 210 | 240 | | | | | | | | | |
| 06/14/85 | 1020 | 7.5 | 1450 | 1.1 | 220 | 250 | | | | | | | | | |
| 07/02/85 | 1035 | 7.7 | 1200 | 1.1 | 150 | 210 | | | | | | | | | |
| 08/15/85 | 1120 | | 1350 | 1.0 | 190 | 230 | | | | | | | | | |
| 08/29/85 | 0840 | 7.8 | 1100 | 0.88 | 170 | 200 | | | | | | | | | |
| 09/28/85 | 1250 | | 1100 | 0.52 | 170 | 140 | | | | | | | | | |
| 10/31/85 | 1215 | 7.9 | 1550 | 1.3 | 220 | 260 | | | | | | | | | |
| 12/07/85 | 1455 | 8.0 | 2650 | 2.6 | 390 | 550 | | | | | | | | | |
| 01/04/86 | 1300 | 8.2 | 3300 | 4.1 | 510 | 780 | | | | | | | | | |
| 01/14/86 | 1510 | | 3000 | 3.7 | 410 | 730 | | | | | | | | | 240 |
| 02/07/86 | 1020 | 7.7 | 3000 | 4.1 | 420 | 200 | 72 | 404 | 7 | 0 | 200 | 780 | 2300 | | |
| 03/01/86 | 1730 | 8.2 | 2400 | 2.8 | 270 | 500 | 120 | 56 | 320 | 5 | 0 | 150 | 480 | 1500 | |
| 04/19/86 | 0930 | | 1300 | 1.5 | 160 | 240 | 75 | 32 | 160 | 4 | 0 | 120 | 320 | 890 | |
| 06/26/86 | 1515 | 7.8 | 1200 | 1.1 | 190 | 250 | 71 | 30 | 149 | 5 | 0 | 110 | 280 | 750 | |
| 06/03/86 | 1515 | 7.8 | 730 | 0.45 | 97 | 130 | | | | | | | | | |
| 06/26/86 | 1330 | 7.6 | 1250 | 0.97 | 160 | 210 | | | | | | | | | |
| 08/04/86 | 1540 | 8.8 | 980 | 0.91 | 120 | 190 | | | | | | | | | |
| 09/02/86 | 1145 | | 1300 | 1.3 | 150 | 250 | | | | | | | | | 120 |
| 09/27/86 | 1505 | 7.8 | 1000 | 0.84 | 110 | 190 | | | | | | | | | 110 |
| 11/03/86 | 1430 | | | 1.2 | 180 | 250 | | | | | | | | | 130 |
| 12/04/86 | 7.6 | | 2400 | 2.1 | 250 | 410 | 170 | 53 | 250 | 12 | 0 | 150 | 480 | 1400 | |
| 01/02/87 | 1515 | 8.0 | | 2.4 | 270 | 510 | | | | | | | | | 150 |

MINERAL WATER QUALITY DATA

MAP INDEX 0-5.....MERS30 SALT SLOUGH AT WOLFSN ROAD (SAN LUIS RANCH) (cont.)

| DATE | TIME | pH | EC (umhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|--------|-----|------------------|-------------------|-----|-----|-----|----|-----|-------|-----|-------|-----|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 01/30/87 | 1125 | 7.7 | 2600 | 3.2 | 300 | 500 | | | | 0 | 180 | 180 | |
| 02/27/87 | 1125 | 7.7 | 3050 | 3.9 | 430 | | | | | | | | |
| 04/01/87 | 1125 | 7.6 | 2310 | 2.2 | 330 | | | | | | | | |
| 05/01/87 | 1245 | 8.1 | 1730 | 1.8 | 450 | | | | | | | | |
| 06/01/87 | 1330 | 7.2 | 1560 | 1.6 | 196 | 340 | | | | | | | |
| 07/01/87 | 1105 | | 1900 | 2.3 | 220 | | | | | | | | |
| 07/31/87 | 1210 | 7.2 | 1600 | 1.5 | 170 | 250 | | | | 130 | | | |
| 09/01/87 | 1205 | | 1330 | 0.81 | 190 | 190 | | | | 130 | | | |
| 10/01/87 | 1200 | 7.6 | 1770 | 1.5 | 260 | 300 | | | | 140 | | | |
| 11/03/87 | 1245 | 8.2 | 1900 | 2.0 | 280 | 360 | | | | 0 | 170 | 170 | |
| 12/01/87 | 1345 | 7.6 | 2900 | 2.9 | 390 | 560 | | | | 0 | 210 | 210 | |
| 01/05/88 | 1305 | 7.8 | 3700 | 3.6 | 440 | 760 | | | | 0 | 220 | 220 | |
| 01/27/88 | 1720 | 7.8 | 3650 | 3.9 | 440 | 790 | | | | 0 | 220 | 220 | |
| 03/09/88 | 1255 | | 2350 | 2.3 | 300 | 520 | | | | <1 | 170 | 170 | |
| 03/30/88 | 1245 | 7.9 | 2550 | 2.8 | 320 | 570 | | | | <1 | 170 | 170 | |
| 85 WY* | MIN | | 1100 | 0.52 | 150 | 140 | | | | | | | |
| | MED | | 1200 | 1.1 | 190 | 230 | | | | | | | |
| | MAX | | 1650 | 1.2 | 220 | 320 | | | | | | | |
| | # DATA | | 7 | 7 | 7 | 7 | | | | | | | |
| 86 WY* | MIN | | 730 | 0.45 | 97 | 130 | 71 | 30 | 149 | 4 | 0 | 110 | 80 |
| | MED | | 1300 | 1.3 | 190 | 250 | 98 | 44 | 240 | 5 | 0 | 135 | 120 |
| | MAX | | 3300 | 4.1 | 510 | 780 | 200 | 72 | 404 | 7 | 0 | 200 | 240 |
| | # DATA | | 13 | 13 | 13 | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |

C-13

MINERAL WATER QUALITY DATA

MAP INDEX 0-5.....MER530 SALT SLOUGH AT WOLFSEN ROAD (SAN LUIS RANCH) (cont.)

| DATE | EC (µmhos/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total Alk | TDS |
|--------|------------------|------|------|-----------------|-----|-----|----|-----|-----------------|------------------|--------------|-----|
| | | | | | | | | | | | | |
| 87 WY* | MIN | 1330 | 0.81 | 170 | 190 | 170 | 53 | 250 | 12 | 0 | 150 | 130 |
| | MED | 1900 | 2.1 | 250 | 340 | 170 | 53 | 250 | 12 | 0 | 165 | 140 |
| | MAX | 3050 | 3.9 | 450 | 510 | 170 | 53 | 250 | 12 | 0 | 180 | 140 |
| # DATA | 9 | 11 | 11 | 7 | 1 | 1 | 1 | 1 | 2 | 2 | 6 | 1 |
| 88 WY* | MIN | 1770 | 0.32 | 150 | 140 | | | | | 0 | 160 | 140 |
| | MED | 2550 | 2.3 | 300 | 520 | | | | | 0 | 190 | 170 |
| | MAX | 3700 | 3.9 | 440 | 790 | | | | | <1 | 220 | 220 |
| # DATA | 7 | 7 | 7 | 7 | 7 | | | | | 6 | 6 | 7 |
| TOTAL | MIN | 730 | 0.32 | 97 | 130 | 71 | 30 | 149 | 4 | 0 | 110 | 80 |
| | MED | 1690 | 1.5 | 220 | 250 | 120 | 53 | 250 | 5 | 0 | 170 | 150 |
| | MAX | 3700 | 4.1 | 510 | 790 | 200 | 72 | 404 | 12 | <1 | 220 | 240 |
| # DATA | 36 | 38 | 38 | 33 | 5 | 5 | 5 | 5 | 5 | 12 | 12 | 23 |
| | | | | | | | | | | 5 | | |

* Water Year: extending from 1 October of one year to 1 October
of the following year.

MINERAL WATER QUALITY DATA

MAP INDEX 0-6.....MER543 CITY DITCH (SAN LUIS WASTEMAY TO MUD SLOUGH)

LOCATIONLatitude 37° 07' 44"; Longitude 120° 48' 53"; In
 SW 1/4, SW 1/4, SW 1/4, Sec. 19, T.9S., R.11E.,
 2.2 miles N of Los Banos Wildlife Refuge Office.

| DATE | TIME | pH | EC (umhos/cm) | Total Recoverable | | | | | | Total Alk | Hard. | TDS |
|----------|------|-----|------------------|-------------------|-----|------|-----|----|-----|--------------|-------|-----|
| | | | | B | Cl | SO4 | Ca | Mg | Na | K | | |
| 05/02/85 | 1330 | 8.2 | 2900 | 4.4 | 330 | 779 | | | | | | |
| 06/03/85 | 1200 | | 2200 | 3.2 | 210 | 540 | | | | | | |
| 07/02/85 | 0940 | 8.0 | 2100 | 3.1 | 240 | 540 | | | | | | |
| 08/15/85 | 1020 | | 2000 | 2.8 | 230 | 470 | | | | | | |
| 08/29/85 | 0740 | 8.0 | 2000 | 3.0 | 240 | 520 | | | | | | |
| 10/31/85 | 1110 | 8.3 | 1880 | 2.7 | 230 | 485 | | | | | | |
| 12/07/85 | 1325 | 8.0 | 3200 | 5.1 | 390 | 905 | | | | | | |
| 01/04/86 | 1145 | 8.6 | 4100 | 6.9 | 530 | 1000 | | | | | | |
| 01/14/86 | 1420 | 7.8 | 3200 | 4.5 | 370 | 910 | | | | | | |
| 02/17/86 | 0745 | 7.9 | 3100 | 4.5 | 400 | 850 | 194 | 68 | 375 | 7 | 0 | 160 |
| 03/02/86 | 1155 | 8.4 | 3000 | 4.6 | 340 | 720 | 160 | 70 | 420 | 5 | 0 | 150 |
| 04/19/86 | 0850 | | 2600 | 3.9 | 350 | 760 | 160 | 58 | 350 | 5 | 0 | 120 |
| 04/26/86 | 1615 | 8.2 | 2600 | 4.3 | 360 | 820 | 171 | 59 | 348 | 5 | 0 | 120 |
| 05/13/86 | 1030 | | 2200 | 3.1 | 230 | 615 | 115 | 43 | 255 | 4 | 0 | 100 |
| 08/05/86 | 1130 | 8.4 | 2000 | 3.2 | 220 | 540 | | | | | | |
| 09/02/86 | 1250 | | 1900 | 2.7 | 190 | 660 | | | | | | |
| 09/27/86 | 1615 | 8.4 | 520 | 0.69 | 48 | 80 | | | | | | |
| 12/04/86 | 1410 | 8.1 | | 3.4 | 230 | 630 | 170 | 57 | 360 | 11 | 0 | 140 |
| 01/02/87 | 1635 | 8.4 | 2800 | 3.8 | 240 | 700 | | | | | | |
| 02/27/87 | 1215 | 8.0 | 3720 | 6.1 | 540 | | | | | | | |
| 04/01/87 | 1215 | 7.8 | 3420 | 5.1 | 430 | | | | | | | |
| 09/01/87 | 1055 | | 2480 | 3.7 | 300 | 560 | | | | | | |
| 01/05/88 | 1210 | 8.0 | 3700 | 4.6 | 420 | 840 | | | | 0 | 200 | 200 |
| 03/09/88 | 1345 | | 3400 | 4.7 | 430 | 930 | | | | <1 | 180 | 180 |
| 03/30/88 | 1330 | 7.9 | 3300 | 4.4 | 380 | 830 | | | | <1 | 170 | 170 |

MINERAL WATER QUALITY DATA

MAP INDEX 0-6.....MER543 CITY DITCH (SAN LUIS WASTEWAY TO MUD SLOUGH) (cont.)

| DATE | EC (micros/cm) | B | Cl | SO ₄ | Ca | Mg | Na | K | CO ₃ | HCO ₃ | Total | Alk | TDS |
|--------|-------------------|-------------------|------|-----------------|------|-----|----|-----|-----------------|------------------|-------|-----|------|
| | | Total Recoverable | | | | | | | | | | | |
| 85 WY* | MIN | 2000 | 2.8 | 210 | 470 | | | | | | | | |
| | MED | 2100 | 3.1 | 240 | 540 | | | | | | | | |
| | MAX | 2900 | 4.4 | 330 | 779 | | | | | | | | |
| | # DATA | 5 | 5 | 5 | 5 | | | | | | | | |
| 86 WY* | MIN | 520 | 0.69 | 48 | 80 | 115 | 43 | 255 | 4 | 0 | 100 | 84 | 1450 |
| | MED | 2600 | 4.1 | 345 | 740 | 160 | 59 | 350 | 5 | 0 | 120 | 120 | 1750 |
| | MAX | 4100 | 6.9 | 530 | 1000 | 194 | 70 | 420 | 7 | 0 | 160 | 210 | 2000 |
| | # DATA | 12 | 12 | 12 | 12 | 5 | 5 | 5 | 5 | 5 | 5 | 9 | 5 |
| 87 WY* | MIN | 2480 | 3.4 | 230 | 560 | 170 | 57 | 360 | 11 | 0 | 140 | 140 | 1800 |
| | MED | 3110 | 3.8 | 300 | 630 | 170 | 57 | 360 | 11 | 0 | 140 | 150 | 1800 |
| | MAX | 3720 | 6.1 | 540 | 700 | 170 | 57 | 360 | 11 | 0 | 140 | 162 | 1800 |
| | # DATA | 4 | 5 | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 |
| 88 WY* | MIN | 3300 | 2.7 | 250 | 550 | | | | | | 0 | 180 | 180 |
| | MED | 3400 | 4.6 | 420 | 840 | | | | | | <1 | 200 | 200 |
| | MAX | 3700 | 4.7 | 430 | 930 | | | | | | 4 | 300 | 300 |
| | # DATA | 3 | 3 | 3 | 3 | | | | | | 3 | 3 | 3 |
| TOTAL | MIN | 520 | 0.69 | 48 | 80 | 115 | 43 | 255 | 4 | 0 | 100 | 84 | 1450 |
| | MED | 2700 | 3.8 | 300 | 660 | 165 | 59 | 355 | 5 | 0 | 150 | 150 | 1775 |
| | MAX | 4100 | 6.9 | 540 | 1000 | 194 | 70 | 420 | 11 | <1 | 300 | 300 | 2000 |
| | # DATA | 24 | 25 | 25 | 23 | 6 | 6 | 6 | 6 | 9 | 9 | 15 | 6 |

* Water Year: extending from 1 October of one year to 1 October of the following year.

MINERAL WATER QUALITY DATA

MAP INDEX Q-7.....MER548

SANTA FE CANAL-MUD SLOUGH DIVERSION AT HENRY MILLER ROAD

LOCATION Latitude 37° 05' 59", Longitude 120° 49' 11"
 NW 1/4, NE 1/4, NE 1/4, Sec. 1, T. 10S., R. 10E.,
 On Henry Miller Rd. 0.8 miles E of Mercy Springs Rd.

| DATE | TIME | pH | EC (umhos/cm) | Total Recoverable | | | | | | Total | Alk | Hard. | TDS |
|----------|--------|------|------------------|-------------------|-----|-----|-----|-----|-----|-------|-----|-------|------|
| | | | | B | Cl | SO4 | Ca | Mg | Na | | | | |
| 01/14/86 | 1445 | 8.6 | 3200 | 6 | 380 | 980 | 231 | 76 | 441 | 6 | 0 | 170 | 920 |
| 02/07/86 | 0905 | 7.2 | 3300 | 5 | 440 | 350 | 160 | 67 | 420 | 4 | 4 | 140 | 310 |
| 03/02/86 | 1135 | 9.1 | 3000 | 4.8 | 400 | 920 | 166 | 61 | 372 | 5 | 32 | -92 | 640 |
| 04/26/86 | 1640 | 9.2 | 2700 | 4.4 | 280 | 610 | | | | | | | 1900 |
| 06/26/86 | 1415 | 8.1 | 2400 | 3.2 | 230 | 590 | | | | | | | 120 |
| 08/05/86 | 1115 | 9.6 | 2000 | 3.4 | 220 | 520 | | | | | | | 120 |
| 09/02/86 | 1235 | | 2000 | 3.0 | 220 | 520 | | | | | | | 84 |
| 09/27/86 | 1600 | 8.2 | 1100 | 1.5 | 110 | 250 | | | | | | | 96 |
| 11/03/86 | 1345 | | | 1.8 | 160 | 340 | | | | | | | 120 |
| 01/02/87 | 1615 | 9.4 | 2800 | 3.9 | 270 | 750 | | | | | | | 142 |
| 01/30/87 | 1145 | 8.0 | 2800 | 3.9 | 320 | 640 | | | | | | | 180 |
| 05/01/87 | 1330 | 8.4 | 2740 | 4.0 | 320 | | | | | | | | |
| 06/01/87 | 1415 | 7.9 | 2700 | 4.1 | 320 | 750 | | | | | | | |
| 07/01/87 | 1000 | | 2400 | 4.1 | 260 | | | | | | | | |
| 07/31/87 | 1105 | 7.6 | 2600 | 3.8 | 260 | 560 | | | | | | | 150 |
| 10/01/87 | 1110 | 8.1 | 2950 | 4.2 | 360 | 660 | | | | | | | 140 |
| 11/03/87 | 1325 | 8.6 | 2350 | 3.6 | 340 | 570 | | | | | | | 170 |
| 01/27/88 | 1620 | 8.0 | 3850 | 5 | 440 | 950 | | | | | | | 180 |
| 86 WY* | MIN | 1100 | 1.5 | 110 | 250 | 160 | 61 | 372 | 4 | 0 | 92 | 84 | 1900 |
| | MED | 2550 | 3.9 | 315 | 610 | 166 | 67 | 420 | 5 | 4 | 140 | 122 | 2500 |
| | MAX | 3300 | 6 | 440 | 980 | 231 | 76 | 441 | 6 | 32 | 170 | 200 | 3000 |
| | # DATA | 8 | 8 | 8 | 7 | 3 | 3 | 3 | 3 | 3 | 3 | 8 | 3 |

MINERAL WATER QUALITY DATA

MAP INDEX 0-7.....MERS48

SANTA FE CANAL-MUD SLOUGH DIVERSION AT HENRY MILLER ROAD (cont..)

| DATE | EC (microhos/cm) | B | Cl | SO4 | Ca | Mg | Na | K | CO3 | HCO3 | Total | TDS |
|-------------------|---------------------|-----|-----|-----|-----|----|-----|---|-----|------|-------|------|
| | | | | | | | | | | | Alk | |
| Total Recoverable | | | | | | | | | | | | |
| 87 WY* | | | | | | | | | | | 0 | 180 |
| MIN | 2400 | 1.8 | 160 | 340 | | | | | | | 120 | |
| MED | 2780 | 3.9 | 270 | 640 | | | | | | | 180 | 146 |
| MAX | 2800 | 4.1 | 320 | 750 | | | | | | | 180 | |
| # DATA | 6 | 7 | 7 | 5 | | | | | | | 1 | 4 |
| 88 WY* | | | | | | | | | | | 0 | 170 |
| MIN | 2350 | 3.6 | 340 | 660 | | | | | | | 140 | |
| MED | 2950 | 4.2 | 360 | 570 | | | | | | | 175 | 170 |
| MAX | 3850 | 5 | 440 | 950 | | | | | | | 180 | 180 |
| # DATA | 3 | 3 | 3 | 3 | | | | | | | 2 | 3 |
| TOTAL | | | | | | | | | | | 92 | 84 |
| MIN | 1100 | 1.5 | 110 | 250 | 160 | 61 | 372 | 4 | 0 | | 1900 | |
| MED | 2700 | 4 | 320 | 640 | 166 | 67 | 420 | 5 | 0 | | 142 | 2500 |
| MAX | 3850 | 6 | 440 | 980 | 231 | 76 | 441 | 6 | 32 | | 200 | 3000 |
| # DATA | 17 | 18 | 18 | 15 | 3 | 3 | 3 | 3 | 6 | | 15 | 3 |

* Water year: extending from 1 October of one year to 1 October
of the following year

APPENDIX D

Trace Element Water Quality Data for Inflow Monitoring Stations Listed in Order by Map Index Number

| Map Index | RWCB Site I.D. | Site Name | Page |
|-----------|----------------|-----------------------------------|------|
| I-1 | MER556 | Firebaugh @ Russell Avenue | D-2 |
| I-2 | MER501 | Panoche Drain | D-4 |
| I-3 | MER552 | Mercy Springs Drain | D-6 |
| I-4 | MER506 | Agatha Drain | D-8 |
| I-5 | MER507 | Helm Canal | D-10 |
| I-6 | MER504 | Hamburg Drain | D-11 |
| I-7 | MER505 | Camp 13 Slough | D-13 |
| I-8 | MER502 | Charleston Drain | D-15 |
| I-9 | MER555 | Almond Drive Drain | D-17 |
| I-10 | MER509 | Rice Drain | D-18 |
| I-11 | MER521 | Boundary Drain | D-20 |
| I-12 | MER528 | Salt Slough Ditch @ Hereford Road | D-22 |
| I-13 | MER513 | Garzas Creek @ Hunt Road | D-24 |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-1.....MER556 FIREBAUGH DRAIN AT RUSSELL AVENUE

LOCATIONLatitude 36 55'27", Longitude 120 39'11"
 In SW 1/4, SW 1/4, SW 1/4, Sec. 34, T11S., R.12E.,
 E side of Russell Ave., 2.7 miles S of South Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|-----|----|----|----|----|-----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 0835 | 35 | | | | | | | |
| 06/03/85 | 0940 | 40 | | | | | | | |
| 06/13/85 | 1130 | 34 | | | | | | | |
| 07/02/85 | 0645 | 48 | | | | | | | |
| 08/15/85 | 0715 | 32 | | | | | | | |
| 08/28/85 | 1600 | 24 | | | | | | | |
| 09/28/85 | 0840 | 50 | | | | | | | |
| 10/31/85 | 0800 | 64 | | | | | | | |
| 12/07/85 | 0825 | 5 | 6 | 9 | 1 | 18 | <5 | | <0.5 |
| 01/04/86 | 0810 | 4 | <5 | 8 | 4 | 11 | <5 | | <0.2 |
| 01/14/86 | 1115 | 49 | 9 | 8 | 39 | 34 | <5 | | <0.5 |
| 02/01/86 | 1540 | 45 | 15 | 14 | 18 | 29 | <5 | | <0.5 |
| 03/01/86 | 0830 | 80 | 15 | 26 | 30 | 31 | <5 | | <0.5 |
| 04/03/86 | | 66 | 13 | 17 | 28 | 27 | <10 | 41 | |
| 04/19/86 | 0640 | 69 | 25 | 14 | 19 | 44 | <5 | | <0.5 |
| 04/27/86 | 0800 | 66 | | 12 | 16 | 51 | <5 | 14 | <0.2 |
| 05/13/86 | 0800 | 55 | 9 | 26 | 10 | 29 | <5 | | <0.5 |
| 06/04/86 | 0810 | 36 | 17 | 8 | 4 | 14 | <5 | | <0.5 |
| 06/17/86 | 0730 | 33 | 17 | 6 | 19 | 13 | <5 | 10 | <0.5 |
| 06/26/86 | 1550 | 46 | 25 | 4 | 10 | 9 | <5 | 6 | <0.5 |
| 08/05/86 | 0830 | 30 | 9 | 8 | 2 | 21 | <5 | 24 | <0.5 |
| 09/02/86 | 1600 | 32 | 16 | 3 | 3 | 6 | <5 | 10 | <0.5 |
| 09/28/86 | 0830 | 37 | 7 | 12 | 20 | 28 | <5 | 42 | <0.5 |
| 11/03/86 | 1140 | 48 | 7 | 10 | 24 | 14 | <5 | 19 | |
| 12/04/86 | 1215 | 79 | <5 | <1 | 12 | 26 | <5 | <1 | <0.5 |
| 01/03/87 | 0825 | 16 | 28 | 5 | 8 | 15 | <5 | 7 | <0.5 |
| 01/30/87 | 1355 | 58 | 7 | 8 | 2 | 9 | <5 | 28 | <0.5 |
| 02/27/87 | 1410 | 76 | 16 | 5 | 14 | 11 | <5 | 17 | |
| 04/01/87 | 1345 | 67 | 20 | 6 | 13 | 15 | <5 | 20 | |
| 05/01/87 | 1525 | 38 | 13 | 9 | 19 | 22 | <5 | 35 | |
| 06/01/87 | 1600 | 40 | 9 | 15 | 30 | 28 | <5 | 35 | |
| 07/01/87 | 0815 | 42 | 9 | 13 | 20 | 28 | 13 | 40 | |
| 07/31/87 | 0900 | 38 | 5 | 14 | 35 | 34 | <5 | 46 | |
| 09/01/87 | 0920 | 35 | 7 | 10 | 29 | 25 | 6 | 37 | |
| 10/01/87 | 0945 | 50 | 13 | 8 | 18 | 18 | 7 | 23 | |
| 11/03/87 | 1510 | 47 | 12 | 14 | 28 | 32 | <5 | 41 | |
| 12/01/87 | 1600 | 187 | 52 | 3 | 5 | 6 | <5 | 3 | |
| 01/05/88 | 1050 | 150 | 36 | 5 | 8 | 10 | <5 | 21 | |
| 01/27/88 | 1440 | 55 | | 7 | 10 | 10 | <5 | 17 | |
| 03/09/88 | 1530 | 119 | | 10 | 20 | 19 | <5 | 24 | |
| 03/30/88 | 1600 | | | 14 | 25 | 25 | <10 | 36 | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-1.....MER556 FIREBAUGH DRAIN AT RUSSELL AVENUE (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|----|----|----|
| | |ug/L..... | | | | | |
| | | Total Recoverable | | | | | |
| 85 WY* | MIN | 24 | | | | | |
| | MED | 35 | | | | | |
| | MAX | 50 | | | | | |
| | # DATA | 7 | | | | | |
| 86 WY* | MIN | 4 | <5 | 3 | 1 | 6 | 6 |
| | MED | 45.5 | 14 | 9 | 16 | 27 | 14 |
| | MAX | 80 | 25 | 26 | 39 | 51 | 42 |
| | # DATA | 16 | 14 | 15 | 15 | 15 | 7 |
| 87 WY* | MIN | 16 | <5 | <1 | 2 | 9 | <1 |
| | MED | 42 | 9 | 9 | 19 | 22 | 28 |
| | MAX | 79 | 28 | 15 | 35 | 34 | 46 |
| | # DATA | 11 | 11 | 11 | 11 | 11 | 11 |
| 88 WY* | MIN | 47 | 12 | 3 | 5 | 6 | 3 |
| | MED | 87 | 25 | 8 | 18 | 18 | 23 |
| | MAX | 187 | 52 | 14 | 28 | 32 | 41 |
| | # DATA | 6 | 4 | 7 | 7 | 7 | 7 |
| TOTAL | MIN | 4 | <5 | <1 | 1 | 6 | <1 |
| | MED | 46.5 | 13 | 9 | 18 | 21 | 23 |
| | MAX | 187 | 52 | 26 | 39 | 51 | 46 |
| | # DATA | 40 | 29 | 33 | 33 | 33 | 25 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-2.....MER501 PANOCHE DRAIN AT O'BANION GAUGE STATION

LOCATION Latitude 36 55'27", Longitude 120 41'19"
 In SW 1/4, SW 1/4, SW 1/4, Sec. 32, T.11S., R.12E., located
 0.5 miles S of CCID Main Canal, 1.9 miles W of Russell Rd.;
 5.5 miles SW of Dos Palos (3.4 SW of South Dos Palos).

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|----|-----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1115 | 52 | | | | | | | |
| 06/03/85 | 1050 | 38 | | | | | | | |
| 06/13/85 | 1300 | 42 | | | | | | | |
| 07/02/85 | 0755 | 30 | | | | | | | |
| 08/15/85 | 0830 | 24 | | | | | | | |
| 08/28/85 | 1320 | 23 | | | | | | | |
| 09/28/85 | 1005 | 42 | 3 | | | | | | |
| 10/31/85 | 0920 | 63 | | | | | | | |
| 04/03/86 | | 63 | 4 | <10 | 45 | 45 | <10 | 23 | |
| 04/19/86 | 0730 | 69 | 8 | 13 | 27 | 21 | <5 | | <0.5 |
| 04/27/86 | 0915 | 55 | | 5 | 32 | 26 | <5 | 5 | <0.2 |
| 05/13/86 | 0845 | 56 | 8 | 3 | 26 | 19 | <5 | | <0.5 |
| 06/04/86 | 0930 | 46 | 4 | 12 | 25 | 10 | <5 | | <0.5 |
| 06/17/86 | 0810 | 43 | 6 | 5 | 11 | 8 | <5 | 6 | <0.5 |
| 06/26/86 | 1710 | 64 | 6 | 6 | 31 | 13 | <5 | 16 | <0.5 |
| 08/05/86 | 0935 | 55 | 6 | 9 | 9 | 17 | <5 | 30 | <0.5 |
| 09/02/86 | 1650 | 46 | 6 | 5 | 13 | 7 | <5 | 10 | <0.5 |
| 09/28/86 | 0945 | 64 | 7 | 6 | 18 | 12 | <5 | 15 | <0.5 |
| 11/03/86 | 1055 | 52 | 4 | 9 | 29 | 12 | <5 | 13 | |
| 12/04/86 | 1030 | 74 | <5 | 10 | 28 | 13 | <5 | 17 | <0.5 |
| 02/27/87 | 1420 | 60 | <5 | 3 | 41 | 6 | <5 | 8 | |
| 04/01/87 | 1310 | 83 | 5 | 11 | 71 | 29 | <5 | 35 | |
| 05/01/87 | 1540 | 44 | <5 | 11 | 40 | 23 | <5 | 38 | |
| 06/01/87 | 1615 | 50 | 6 | 7 | 31 | 11 | <5 | 10 | |
| 07/01/87 | 0830 | 42 | 4 | 7 | 21 | 13 | <5 | 18 | |
| 07/31/87 | 0915 | 33 | 2 | 10 | 40 | 16 | <5 | 29 | |
| 09/01/87 | 0930 | 39 | 3 | 10 | 48 | 23 | 5 | 35 | |
| 10/01/87 | 1000 | 69 | 7 | 5 | 34 | 14 | <5 | 17 | |
| 11/03/87 | 1525 | 42 | 3 | 16 | 68 | 43 | 6 | 48 | |
| 12/01/87 | 1540 | 55 | 4 | 12 | 35 | 14 | <5 | 23 | |
| 01/27/88 | 1500 | 109 | | 5 | 46 | 8 | <5 | 11 | |
| 03/09/88 | 1540 | 60 | | 17 | 73 | 27 | 6 | 38 | |
| 03/30/88 | 1525 | | | 20 | 66 | 29 | 11 | 45 | |
| <hr/> | | | | | | | | | |
| 85 HY* | MIN | 23 | 3 | | | | | | |
| | MED | 38 | 3 | | | | | | |
| | MAX | 52 | 3 | | | | | | |
| | # DATA | 7 | 1 | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-2.....MER501 PANOCHE DRAIN AT O'BANION GAUGE STATION (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|-----|-----|------|------|------|
| | | ug/L | | | | | |
| | | Total Recoverable | | | | | |
| 86 WY* | MIN | 43 | 3.8 | <10 | 9 | 7 | 5 |
| | MED | 56 | 6.1 | 5.5 | 25.5 | 15 | 15 |
| | MAX | 69 | 8 | 13 | 45 | 45 | 30 |
| | # DATA | 11 | 9 | 10 | 10 | 10 | 7 |
| 87 WY* | MIN | 33 | <5 | 3 | 21 | 6 | 8 |
| | MED | 47 | 2.5 | 10 | 40 | 13 | 18 |
| | MAX | 83 | 6 | 11 | 71 | 29 | 38 |
| | # DATA | 9 | 10 | 9 | 9 | 9 | 9 |
| 88 WY* | MIN | 42 | 3 | 5 | 34 | 8 | 11 |
| | MED | 60 | 4 | 14 | 56 | 20.5 | 30.5 |
| | MAX | 109 | 7 | 20 | 73 | 43 | 48 |
| | # DATA | 5 | 3 | 6 | 6 | 6 | 6 |
| TOTAL | MIN | 23 | <5 | <10 | 9 | 6 | 5 |
| | MED | 52 | 4 | 9 | 32 | 14 | 17.5 |
| | MAX | 109 | 8 | 20 | 73 | 45 | 48 |
| | # DATA | 32 | 23 | 25 | 25 | 25 | 23 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-3.....MER552 MERCY SPRINGS DRAIN (OUTLET) NEAR PANOCHE DRAIN

LOCATION Latitude 36 56'01", Longitude 120 42'05",
 In SE 1/4, SE 1/4, NW 1/4, Sec. 31, T.11S., R.12E.,
 S of Firebaugh Drain, 2.6 miles W of Russell Ave,
 2.8 miles S of South Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|--------|-----|-----|-----|-----|-----|----|------|
| ug/L | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 04/03/86 | | 22 | 34 | <10 | 8 | 11 | <10 | 14 | |
| 04/19/86 | 0720 | 16 | 22 | 21 | 8 | 19 | <5 | | <0.5 |
| 04/27/86 | 0940 | 6 | | 5 | 5 | 35 | <5 | 3 | <0.2 |
| 05/13/86 | 0910 | 52 | 10 | 10 | 22 | 22 | <5 | | <0.5 |
| 06/04/86 | 0950 | 12 | 14 | 9 | 3 | 18 | <5 | | <0.5 |
| 06/17/86 | 0830 | 16 | 16 | 7 | 16 | 14 | <5 | 11 | <0.5 |
| 06/26/86 | 1730 | 28 | 6 | 4 | 19 | 12 | <5 | 10 | <0.5 |
| 08/05/86 | 0950 | 3.4 | 6 | 3 | 1 | 7 | <5 | 7 | <0.5 |
| 09/02/86 | 1700 | 1.7 | <5 | 3 | 2 | 6 | <5 | 9 | <0.5 |
| 09/28/86 | 1005 | 2.9 | 7 | 4 | 4 | 9 | <5 | 10 | <0.5 |
| 11/03/86 | 1040 | 23 | 13 | 6 | 13 | 11 | <5 | 4 | |
| 12/04/86 | 1045 | 7.0 | 4 | <1 | <1 | 5 | <5 | <1 | <0.5 |
| 01/30/87 | 1405 | 4.0 | 38 | | | | | | |
| 02/27/87 | 1440 | 5.4 | 24 | 3 | 8 | 9 | <5 | 13 | |
| 04/01/87 | 1325 | 14 | 23 | <1 | 4 | 4 | <5 | 2 | |
| 05/01/87 | 1555 | 6.1 | | | | | | | |
| 06/01/87 | 1625 | 6.2 | 16 | 5 | 5 | 6 | <5 | 2 | |
| 07/01/87 | 0845 | 4.1 | 11 | | | | | | |
| 07/31/87 | 0930 | 6.5 | | 3 | 4 | 7 | <5 | 7 | |
| 09/01/87 | 0945 | 3.8 | | | | | | | |
| 10/01/87 | 1015 | 14 | 31 | 6 | 12 | 24 | <5 | 12 | |
| 11/03/87 | 1540 | 13 | 47 | 4 | 10 | 14 | <5 | 13 | |
| 12/01/87 | 1610 | 17 | 54 | 4 | 7 | 8 | <5 | 14 | |
| 01/05/88 | 1100 | 12 | | | | | | | |
| 01/27/88 | 1520 | 28 | | 3 | 6 | 6 | <5 | 6 | |
| 03/09/88 | 1555 | 4.5 | | | | | | | |
| 03/30/88 | 1535 | | | 11 | 19 | 18 | <10 | 19 | |
| <hr/> | | | | | | | | | |
| 86 WY* | | MIN | 1.7 | <5 | <10 | 1 | 6 | | 3 |
| | | MED | 14 | 10 | 4.5 | 6.5 | 13 | | 10 |
| | | MAX | 52 | 34 | 21 | 22 | 35 | | 14 |
| | | # DATA | 10 | 9 | 10 | 10 | 10 | | 7 |
| <hr/> | | | | | | | | | |
| 87 WY* | | MIN | 3.8 | 4 | <1 | <1 | 4 | | <1 |
| | | MED | 6.2 | 16 | 3 | 4.5 | 6.5 | | 3 |
| | | MAX | 23 | 38 | 6 | 13 | 11 | | 13 |
| | | # DATA | 10 | 7 | 6 | 6 | 6 | | 6 |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-3.....MER552 MERCY SPRINGS DRAIN (OUTLET) NEAR PANOCHE DRAIN (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|----|----|-----|
| | | ug/L..... | | | | | |
| | | Total Recoverable | | | | | |
| 88 WY* | MIN | 4.5 | 31 | 3 | 6 | 6 | 6 |
| | MED | 13.5 | 47 | 4 | 10 | 14 | 13 |
| | MAX | 28 | 54 | 11 | 19 | 24 | 19 |
| | # DATA | 6 | 3 | 5 | 5 | 5 | 5 |
| TOTAL | MIN | 1.7 | <5 | <1 | <1 | 4 | <1 |
| | MED | 9.5 | 16 | 4 | 7 | 11 | 9.5 |
| | MAX | 52 | 54 | 21 | 22 | 35 | 19 |
| | # DATA | 26 | 19 | 21 | 21 | 21 | 18 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-4.....MER506 AGATHA CANAL AT HELM CANAL

LOCATIONLatitude 36 56'04", Longitude 120 41'06"
 In NE 1/4, SE 1/4, NW 1/4, Sec. 31, T.11S., R.12E.,
 150 ft. N of Helm Canal, 2.6 miles W of Russell Ave.,
 3.4 miles SW of South Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1030 | 36 | | | | | | | |
| 06/03/85 | 1000 | 4 | | | | | | | |
| 07/02/85 | 0720 | 29 | | | | | | | |
| 08/15/85 | 0750 | 23 | | | | | | | |
| 08/28/85 | 1520 | 28 | | | | | | | |
| 09/28/85 | 0935 | 1 | 1 | | | | | | |
| 10/31/85 | 0825 | 2 | | | | | | | |
| 12/07/85 | 1100 | 74 | 16 | 20 | 24 | 26 | <5 | | <0.5 |
| 01/14/86 | 1155 | 44 | 6 | 9 | 17 | 55 | <5 | | <0.5 |
| 03/02/86 | 0920 | 15 | 5 | 3 | 3 | 11 | <5 | | <0.5 |
| 04/02/86 | | 64 | | | | | | | |
| 04/27/86 | 0830 | 58 | | 9 | 35 | 39 | <5 | 9 | <0.2 |
| 06/04/86 | 0845 | 45 | | | | | | | |
| 06/26/86 | 1630 | 41 | <5 | 9 | 53 | 24 | <5 | 27 | <0.5 |
| 08/05/86 | 0900 | 57 | <5 | 10 | 7 | 18 | <5 | 32 | <0.5 |
| 09/02/86 | 1615 | 32 | <5 | 3 | 8 | 3 | <5 | 8 | <0.5 |
| 09/28/86 | 0920 | 0.9 | <5 | 5 | 6 | 10 | <5 | 16 | <0.5 |
| 11/03/86 | 1125 | 21 | 13 | 4 | 8 | 7 | <5 | 2 | |
| 01/03/87 | 0845 | 80 | 6 | 9 | 35 | 16 | 9 | 22 | <0.5 |
| 02/27/87 | 1345 | 57 | | | | | | | |
| 04/01/87 | 1400 | 72 | | | | | | | |
| 05/01/87 | 1500 | 37 | | | | | | | |
| 06/01/87 | 1540 | 38 | 6 | | | | | | |
| 07/01/87 | 0750 | 41 | 3 | | | | | | |
| 07/31/87 | 0835 | 36 | | | | | | | |
| 09/01/87 | 0855 | 34 | | | | | | | |
| 10/01/87 | 0920 | 2.2 | 1 | | | | | | |
| 11/03/87 | 1450 | 41 | 4 | | | | | | |
| 01/27/88 | 1410 | 16 | | | | | | | |
| 03/09/88 | 1505 | 6.3 | | | | | | | |

| | | | | | | | |
|--------|--------|-----|----|----|----|----|----|
| 85 WY* | MIN | 1 | 1 | | | | |
| | MED | 26 | 1 | | | | |
| | MAX | 36 | 1 | | | | |
| | # DATA | 6 | 1 | | | | |
| 86 WY* | MIN | 0.9 | <5 | 3 | 3 | 3 | 8 |
| | MED | 44 | <5 | 9 | 13 | 21 | 16 |
| | MAX | 74 | 16 | 20 | 53 | 55 | 32 |
| | # DATA | 11 | 7 | 8 | 8 | 8 | 5 |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-4.....MER506 AGATHA CANAL AT HELM CANAL (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|-------------------|--------|-----|-----|-----|----|----|----|
|ug/L..... | | | | | | | |
| Total Recoverable | | | | | | | |
| 87 WY* | MIN | 21 | 3 | 4 | 8 | 7 | 2 |
| | MED | 38 | 6 | 6.5 | 22 | 12 | 12 |
| | MAX | 80 | 13 | 9 | 35 | 16 | 22 |
| | # DATA | 9 | 4 | 2 | 2 | 2 | 2 |
| 88 WY* | MIN | 2.2 | 1 | | | | |
| | MED | 11 | 2.5 | | | | |
| | MAX | 41 | 4 | | | | |
| | # DATA | 4 | 2 | | | | |
| TOTAL | MIN | 0.9 | 1 | 3 | 3 | 3 | 2 |
| | MED | 36 | <5 | 9 | 13 | 17 | 16 |
| | MAX | 80 | 16 | 20 | 53 | 55 | 32 |
| | # DATA | 30 | 14 | 10 | 10 | 10 | 7 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-5.....MER507 HELM CANAL NEAR AGATHA CANAL

LOCATION Latitude 36 56'04", Longitude 120 41'06"
 In NE 1/4, SE 1/4, NW 1/4, Sec. 31, T.11S., R.12E.,
 0.1 miles W of Agatha Canal, 2.7 miles W of Russell Ave.;
 4.5 miles W of Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1040 | 44 | | | | | | | |
| 06/03/85 | 1030 | 35 | | | | | | | |
| 07/02/85 | 0733 | 35 | | | | | | | |
| 08/15/85 | 0755 | 24 | | | | | | | |
| 08/28/85 | 1535 | 30 | | | | | | | |
| 09/28/85 | 0930 | 1 | | | | | | | |
| 10/31/85 | 0830 | 1 | | | | | | | |
| 12/07/85 | 1110 | 5 | 8 | | 5 | <5 | <5 | | <0.5 |
| 03/02/86 | 0900 | 1 | <5 | 3 | 3 | 6 | <5 | | <0.5 |
| 04/02/86 | | <1 | | | | | | | |
| 04/27/86 | 0845 | <1 | | 2 | 3 | 6 | <5 | 3 | <0.2 |
| 06/04/86 | 0900 | 16 | | | | | | | |
| 06/26/86 | 1640 | 42 | <5 | 8 | 51 | 19 | <5 | 23 | <0.5 |
| 08/05/86 | 0855 | 59 | <5 | 6 | 4 | 15 | <5 | 20 | <0.5 |
| 09/02/86 | 1620 | 45 | <5 | 4 | 10 | 8 | <5 | 9 | <0.5 |
| 09/28/86 | 0905 | 1 | <5 | 4 | 4 | 6 | <5 | 11 | <0.5 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 1 | | | | | | | |
| | MED | 33 | | | | | | | |
| | MAX | 44 | | | | | | | |
| | # DATA | 6 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | <5 | 2 | 3 | <5 | | 3 | |
| | MED | 3 | <5 | 4 | 4 | 6 | | 11 | |
| | MAX | 59 | 8 | 8 | 51 | 19 | | 23 | |
| | # DATA | 10 | 6 | 6 | 7 | 7 | | 5 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | <1 | <5 | 2 | 3 | <5 | | 3 | |
| | MED | 20 | <5 | 4 | 4 | 6 | | 11 | |
| | MAX | 59 | 8 | 8 | 51 | 19 | | 23 | |
| | # DATA | 16 | 6 | 6 | 7 | 7 | | 5 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-6.....MER504 HAMBURG DRAIN NEAR CAMP 13 SLOUGH

LOCATION Latitude 36 56'32", Longitude 120 45'23"
 In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E.,
 50 ft. S of CCID Main Canal, 9.2 miles S-SE of Los Banos,
 6.7 miles W-SW of South Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|----|-----|----|------|
| ug/L | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 0850 | 79 | | | | | | | |
| 06/03/85 | 0950 | 48 | | | | | | | |
| 07/02/85 | 0650 | 45 | | | | | | | |
| 08/15/85 | 0725 | 51 | | | | | | | |
| 08/28/85 | 1610 | 36 | | | | | | | |
| 09/28/85 | 0830 | 5.0 | 6 | | | | | | |
| 10/31/85 | 0750 | 4.0 | | | | | | | |
| 12/07/85 | 0805 | 84 | 6 | 14 | 6 | 25 | <5 | | <0.5 |
| 01/04/86 | 0820 | 47 | 3 | 8 | 22 | 13 | <5 | | <0.2 |
| 01/14/86 | 1105 | 50 | <5 | 4 | 21 | 22 | <5 | | <0.5 |
| 02/01/86 | 1555 | 45 | 5 | 8 | 16 | 18 | <5 | | <0.5 |
| 03/02/86 | 0840 | 51 | 7 | 4 | 8 | 8 | <5 | | <0.5 |
| 04/03/86 | | 65 | 4 | <10 | 17 | <5 | <10 | 13 | |
| 04/19/86 | 0650 | 70 | 8 | 10 | 24 | 7 | <5 | | <0.5 |
| 04/27/86 | 0815 | 56 | | 2 | 13 | 26 | <5 | 3 | <0.2 |
| 05/13/86 | 0810 | 56 | 7 | 5 | 15 | 15 | <5 | | <0.5 |
| 06/04/86 | 0825 | 46 | 1 | 7 | 8 | 10 | <5 | | <0.5 |
| 06/17/86 | 0745 | 67 | 4 | 5 | 6 | 10 | <5 | 11 | <0.5 |
| 06/26/86 | 1600 | 59 | 4 | 5 | 14 | 10 | <5 | 14 | <0.5 |
| 08/05/86 | 0835 | 37 | 4 | 13 | 5 | 43 | 5 | 56 | <0.5 |
| 09/02/86 | 1555 | 42 | 3 | 4 | 12 | 8 | <5 | 13 | <0.5 |
| 09/28/86 | 0840 | 12 | 6 | <1 | <1 | <5 | <5 | 2 | <0.5 |
| 11/03/86 | 1135 | 42 | 4 | 2 | 13 | <5 | <5 | <1 | |
| 12/04/86 | 1200 | 77 | <5 | <1 | 24 | <5 | <5 | <1 | <0.5 |
| 01/03/87 | 0810 | 65 | 5 | 3 | 13 | <5 | <5 | 5 | <0.5 |
| 02/27/87 | 1325 | 61 | <5 | 8 | 34 | 38 | 7 | 51 | |
| 04/01/87 | 1425 | 58 | 5 | 2 | 9 | <5 | <5 | 2 | |
| 05/01/87 | 1430 | 50 | <5 | 5 | 16 | 10 | <5 | 25 | |
| 06/01/87 | 1525 | 49 | 3 | | 14 | 5 | <5 | 6 | |
| 07/01/87 | 0725 | 57 | 1 | 11 | 21 | 22 | 5 | 32 | |
| 07/31/87 | 0815 | 54 | 1 | 23 | 45 | 30 | 10 | 49 | |
| 09/01/87 | 0835 | 60 | 2 | 5 | 17 | 10 | <5 | 14 | |
| 10/01/87 | 0910 | 56 | 4 | 6 | 12 | <5 | <5 | 6 | |
| 01/27/88 | 1355 | 56 | | 2 | 10 | <5 | <5 | 6 | |
| 03/09/88 | 1450 | 71 | | 14 | 46 | 22 | 5 | 36 | |
| 03/30/88 | 1445 | | | 9 | 34 | 17 | <10 | 19 | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 5 | 6 | | | | | | |
| | MED | 47 | 6 | | | | | | |
| | MAX | 79 | 6 | | | | | | |
| | # DATA | 6 | 1 | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-6.....MER504 HAMBURG DRAIN NEAR CAMP 13 SLOUGH (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|----|----|----|
| | |ug/L..... | | | | | |
| | | Total Recoverable | | | | | |
| 86 WY* | MIN | 4 | 1 | <1 | <1 | <5 | 2 |
| | MED | 51 | 4 | 5 | 13 | 10 | 13 |
| | MAX | 84 | 8 | 14 | 24 | 43 | 56 |
| | # DATA | 16 | 14 | 15 | 15 | 15 | 7 |
| 87 WY* | MIN | 42 | 1 | <1 | 9 | <5 | <1 |
| | MED | 58 | <5 | 5 | 17 | 8 | 10 |
| | MAX | 77 | 5 | 23 | 45 | 28 | 51 |
| | # DATA | 10 | 10 | 9 | 10 | 10 | 10 |
| 88 WY* | MIN | 56 | 4 | 2 | 10 | <5 | 6 |
| | MED | 56 | 4 | 8 | 23 | 11 | 13 |
| | MAX | 71 | 4 | 14 | 46 | 22 | 36 |
| | # DATA | 3 | 1 | 4 | 4 | 4 | 4 |
| TOTAL | MIN | 4 | 1 | <1 | <1 | <5 | <1 |
| | MED | 54 | 4 | 5 | 14 | 10 | 11 |
| | MAX | 84 | 8 | 23 | 46 | 43 | 56 |
| | # DATA | 35 | 26 | 28 | 29 | 29 | 21 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-7.....MER505 CAMP 13 SLOUGH AT GAUGE STATION

LOCATION Latitude 36 56'04", Longitude 120 41'06"
 In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E.,
 150 ft. N of CCID Main Canal, 6.4 miles W of Russell Ave.,
 9.2 miles S-SE of Los Banos, 6.7 miles W-SW of South Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|------|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 0910 | 53 | | | | | | | |
| 06/03/85 | 1000 | 28 | | | | | | | |
| 07/02/85 | 0658 | 48 | | | | | | | |
| 08/15/85 | 0710 | 35 | | | | | | | |
| 08/28/85 | 1555 | 29 | | | | | | | |
| 09/28/85 | 0815 | 17 | 4 | | | | | | |
| 10/31/85 | 0745 | 59 | | | | | | | |
| 12/07/85 | 0755 | 19 | 6 | 2 | 2 | 11 | <5 | | <0.5 |
| 01/04/86 | 0800 | 43 | 2 | 11 | 15 | 13 | <5 | | <0.2 |
| 01/14/86 | 1045 | 54 | 6 | 13 | 36 | 38 | <5 | | <0.5 |
| 02/01/86 | 1525 | 44 | 7 | 5 | 14 | 26 | <5 | | <0.5 |
| 03/02/86 | 0810 | 74 | 11 | 18 | 25 | 26 | <5 | | <0.5 |
| 04/02/86 | | 59 | | | | | | | |
| 04/27/86 | 0750 | 61 | | 7 | 14 | 30 | <5 | 9 | <0.2 |
| 06/04/86 | 0800 | 37 | 2 | | | | | | |
| 06/26/86 | 1615 | 41 | <5 | 5 | 24 | 11 | <5 | 14 | <0.5 |
| 08/05/86 | 0825 | 30 | <5 | 8 | 3 | 26 | <5 | 34 | <0.5 |
| 09/02/86 | 1545 | 36 | <5 | 5 | 8 | 11 | <5 | 16 | <0.5 |
| 09/28/86 | 0810 | 13 | <5 | 6 | 8 | 12 | <5 | 18 | <0.5 |
| 11/03/86 | 1150 | 43 | 4 | 14 | 30 | 17 | <5 | 26 | |
| 12/04/86 | 1220 | 44 | <5 | 11 | 38 | 13 | <5 | 19 | <0.5 |
| 01/03/87 | 0800 | 43 | 6 | 5 | 6 | 7 | <5 | 7 | <0.5 |
| 02/27/87 | 1320 | 62 | | | | | | | |
| 04/01/87 | 1415 | 64 | | | | | | | |
| 05/01/87 | 1440 | 39 | | | | | | | |
| 06/01/87 | 1515 | 40 | 8 | | | | | | |
| 07/01/87 | 0735 | 53 | 1 | | | | | | |
| 07/31/87 | 0805 | 37 | 6 | | | | | | |
| 09/01/87 | 0820 | 38 | 9 | | | | | | |
| 10/01/87 | 0855 | 46 | 10 | | | | | | |
| 11/03/87 | 1430 | 4.5 | 5 | | | | | | |
| 12/01/87 | 1525 | 9.1 | 2 | | | | | | |
| 01/27/88 | 1345 | 79 | | | | | | | |
| 03/09/88 | 1435 | 92 | | | | | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 17 | 4 | | | | | | |
| | MED | 32 | 4 | | | | | | |
| | MAX | 53 | 4 | | | | | | |
| | # DATA | 6 | 1 | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 13 | 2 | 2 | 2 | 11 | | 9 | |
| | MED | 43 | <5 | 6.5 | 14 | 19.5 | | 16 | |
| | MAX | 74 | 11 | 18 | 36 | 38 | | 34 | |
| | # DATA | 13 | 10 | 10 | 10 | 10 | | 5 | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-7.....MER505 CAMP 13 SLOUGH AT GAUGE STATION (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|-----|----|----|----|----|
| | | ug/L | | | | | |
| | | Total Recoverable | | | | | |
| 87 WY* | MIN | 37 | 1 | 5 | 6 | 7 | 7 |
| | MED | 43 | 6 | 11 | 30 | 13 | 19 |
| | MAX | 64 | 9 | 14 | 38 | 17 | 26 |
| | # DATA | 10 | 7 | 3 | 3 | 3 | 3 |
| 88 WY* | MIN | 4.5 | 2 | | | | |
| | MED | 46 | 5 | | | | |
| | MAX | 92 | 10 | | | | |
| | # DATA | 5 | 3 | | | | |
| TOTAL | MIN | 4.5 | 1.0 | 2 | 2 | 7 | 7 |
| | MED | 43 | <5 | 7 | 14 | 13 | 17 |
| | MAX | 92 | 11 | 18 | 38 | 38 | 34 |
| | # DATA | 34 | 21 | 13 | 13 | 13 | 8 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-8.....MER502 CHARLESTON DRAIN AT CCID MAIN CANAL

LOCATION Latitude 36 56'59", Longitude 121 46'55"
 In NE 1/4, SE 1/4, NE 1/4, Sec. 29, T.11S., R.11E.,
 N side of CCID Main Canal, 8.7 miles S-SE of Los Banos,
 7.9 miles W-SW of South Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|-----|----|-----|-----|-----|-----|-----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 0745 | 60 | | | | | | | |
| 06/03/85 | 0925 | 104 | | | | | | | |
| 07/02/85 | 0625 | 49 | | | | | | | |
| 08/15/85 | 0655 | 15 | | | | | | | |
| 08/28/85 | 1625 | 46 | | | | | | | |
| 09/28/85 | 0805 | 13 | | | | | | | |
| 10/31/85 | 0730 | 121 | | | | | | | |
| 12/07/85 | 0735 | 104 | 14 | 21 | 8 | 31 | <5 | | <0.5 |
| 01/04/86 | 0740 | 98 | 11 | 18 | 8 | 6 | <5 | | <0.2 |
| 01/14/86 | 1030 | 129 | 11 | 15 | 10 | 56 | <5 | | <0.5 |
| 02/01/86 | 1510 | 92 | 7 | 10 | 5 | 13 | <5 | | <0.5 |
| 03/01/86 | 0755 | 36 | 5 | 10 | 6 | 14 | <5 | | <0.5 |
| 04/03/86 | | 125 | 6 | <10 | 15 | 8 | <10 | 19 | |
| 04/19/86 | 0620 | 110 | 12 | 10 | 11 | 14 | 6 | | <0.5 |
| 04/27/86 | 0735 | 57 | | 5 | 9 | 25 | <5 | 8 | <0.2 |
| 05/13/86 | 0740 | 100 | 10 | 8 | 9 | 19 | <5 | | <0.5 |
| 06/04/86 | 0740 | 76 | 7 | 13 | 13 | 14 | <5 | | <0.5 |
| 06/17/86 | 0715 | 54 | 4 | 13 | 13 | 39 | <5 | 60 | <0.5 |
| 06/26/86 | 1540 | 94 | 10 | 4 | 8 | 6 | <5 | 10 | <0.5 |
| 08/05/86 | 0810 | 23 | 2 | 24 | 8 | 100 | <5 | 230 | <0.5 |
| 09/02/86 | 1535 | 61 | 3 | 10 | 15 | 21 | 7 | 18 | <0.5 |
| 09/28/86 | 0750 | 69 | 9 | 4 | 10 | 9 | <5 | 18 | <0.5 |
| 11/03/86 | 1205 | 32 | 4 | 6 | 12 | 6 | <5 | 8 | |
| 12/04/86 | 1240 | 97 | <5 | <1 | 10 | <5 | <5 | <1 | <0.5 |
| 01/03/87 | 0740 | 124 | 6 | 4 | 11 | 6 | <5 | 11 | <0.5 |
| 02/27/87 | 1300 | 114 | 7 | 5 | 14 | 8 | <5 | 20 | |
| 04/01/87 | 1440 | 82 | 8 | 12 | 33 | 28 | 7 | 54 | |
| 05/01/87 | 1415 | 102 | <5 | 11 | 30 | 23 | <5 | 49 | |
| 06/01/87 | 1505 | 65 | 2 | 22 | 50 | 37 | <5 | 76 | |
| 07/01/87 | 0705 | 75 | 1 | 74 | 250 | 150 | 48 | 370 | |
| 07/31/87 | 0750 | 44 | 1 | 51 | 80 | 75 | 24 | 190 | |
| 09/01/87 | 0800 | 47 | 2 | 13 | 37 | 20 | 8 | 50 | |
| 10/01/87 | 0835 | 31 | 7 | 3 | 5 | 5 | <5 | 8 | |
| 11/03/87 | 1420 | 63 | 4 | 13 | 28 | 21 | <5 | 45 | |
| 12/01/87 | 1510 | 28 | 11 | 1 | 2 | 29 | <5 | 32 | |
| 01/27/88 | 1330 | 85 | | 5 | 15 | 8 | <5 | 19 | |
| 03/09/88 | 1425 | 88 | | 17 | 37 | 27 | 8 | 58 | |
| 03/30/88 | 1420 | | | 22 | 57 | 38 | <10 | 82 | |

85 WY* MIN 13
 MED 48
 MAX 104
 # DATA 6

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-8.....MER502 CHARLESTON DRAIN AT CCID MAIN CANAL (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|-------------------|--------|-----------|-----|------|------|------|------|
| | | ug/L..... | | | | | |
| Total Recoverable | | | | | | | |
| 86 WY* | MIN | 23 | 2 | <10 | 5 | 6 | 8 |
| | MED | 93 | 7.9 | 10 | 9 | 14 | 18 |
| | MAX | 129 | 14 | 24 | 15 | 100 | 230 |
| | # DATA | 16 | 14 | 15 | 15 | 15 | 7 |
| 87 WY* | MIN | 32 | <5 | <1 | 10 | <5 | <1 |
| | MED | 79 | 2 | 11.5 | 31.5 | 21.5 | 49.5 |
| | MAX | 124 | 8 | 74 | 250 | 150 | 370 |
| | # DATA | 10 | 10 | 10 | 10 | 10 | 10 |
| 88 WY* | MIN | 28 | 4 | 1 | 2 | 5 | 8 |
| | MED | 63 | 7 | 9 | 21.5 | 24 | 38.5 |
| | MAX | 88 | 11 | 22 | 57 | 38 | 82 |
| | # DATA | 5 | 3 | 6 | 6 | 6 | 6 |
| TOTAL | MIN | 13 | <5 | <1 | 2 | <5 | <1 |
| | MED | 75 | 6 | 10 | 12 | 20 | 32 |
| | MAX | 129 | 14 | 74 | 250 | 150 | 370 |
| | # DATA | 37 | 27 | 31 | 31 | 31 | 23 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-9.....MER555 ALMOND DRIVE DRAIN

LOCATIONLatitude 36 59'55", Longitude 120 49'00"
 In SW 1/4, SW 1/4, SW 1/4, Sec. 6, T.11S., R.11E.,
 N side of Almond Dr., 1.1 miles E of Mercy Springs Drain,
 100 ft. E of CCID Main Canal, 4.7 miles S of Los Banos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|-----|----|----|----|-----|----|------|
| ug/L | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 06/13/85 | 1040 | 2 | | | | | | | |
| 01/30/87 | 1300 | 4 | 7 | 1 | 2 | <5 | <5 | 3 | <0.5 |
| 02/27/87 | 1240 | 5.6 | | | | | | | |
| 04/01/87 | 1500 | 5.3 | 8 | 2 | 11 | 6 | <5 | 8 | |
| 05/01/87 | 1355 | 4.5 | | | | | | | |
| 06/01/87 | 1445 | 5.2 | 2 | 19 | 45 | 36 | <5 | 43 | |
| 07/01/87 | 0645 | 8.6 | 1 | | | | | | |
| 07/31/87 | 0725 | 2.1 | | 38 | 47 | 41 | 6 | 78 | |
| 09/01/87 | 0730 | 2.7 | | | | | | | |
| 10/01/87 | 0815 | 1.4 | | 7 | 16 | 14 | <5 | 23 | |
| 11/03/87 | 1400 | 1.3 | | 2 | 4 | <5 | <5 | 4 | |
| 12/01/87 | 1450 | 17 | | 1 | 3 | <5 | <5 | <1 | |
| 01/05/88 | 0940 | 4.8 | | | | | | | |
| 01/27/88 | 1305 | 3.4 | | 10 | 28 | 15 | <5 | 24 | |
| 03/09/88 | 1410 | 4.6 | | | | | | | |
| 03/30/88 | 1400 | | | 8 | 26 | 13 | <10 | 15 | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 2 | | | | | | | |
| | MED | 2 | | | | | | | |
| | MAX | 2 | | | | | | | |
| | # DATA | 1 | | | | | | | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 2.1 | 1 | 1 | 2 | <5 | | 3 | |
| | MED | 4.8 | 4.5 | 11 | 28 | 21 | | 25 | |
| | MAX | 8.6 | 8 | 38 | 47 | 41 | | 78 | |
| | # DATA | 8 | 4 | 4 | 4 | 4 | | 4 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 1.3 | | 1 | 3 | <5 | | <1 | |
| | MED | 4 | | 7 | 16 | 13 | | 15 | |
| | MAX | 17 | | 10 | 28 | 15 | | 24 | |
| | # DATA | 6 | | 5 | 5 | 5 | | 5 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | 1.3 | 1 | 1 | 2 | <5 | | <1 | |
| | MED | 4.5 | 4.5 | 7 | 16 | 13 | | 15 | |
| | MAX | 17 | 8 | 38 | 47 | 41 | | 78 | |
| | # DATA | 15 | 4 | 9 | 9 | 9 | | 9 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-10.....MER509 RICE DRAIN AT MALLARD ROAD

LOCATIONLatitude 36 59'22", Longitude 120 14'42"
 In NE 1/4, NW 1/4, SW 1/4, Sec. 7, T.11S., R.12E.,
 S of Santa Fe Grade at Brito, 50 ft. W of Mallard Rd.,
 4.5 miles W of Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1155 | 3 | | | | | | | |
| 06/03/85 | 1115 | 3 | | | | | | | |
| 07/02/85 | 0825 | 2 | | | | | | | |
| 08/15/85 | 0850 | 1 | | | | | | | |
| 08/28/85 | 1250 | 2 | | | | | | | |
| 09/28/85 | 1030 | 4 | | | | | | | |
| 10/31/85 | 0940 | 2 | | | | | | | |
| 12/07/85 | 0940 | 2 | 17 | 21 | 4 | 26 | <5 | | <0.5 |
| 01/04/86 | 0910 | 2 | 37 | 28 | 8 | 25 | <5 | | <0.2 |
| 01/14/86 | 1245 | 4 | 14 | 12 | 19 | 78 | <5 | | <0.5 |
| 03/02/86 | 1000 | 5 | <5 | 13 | 7 | 23 | <5 | | <0.5 |
| 04/02/86 | | 3 | | | | | | | |
| 04/27/86 | 1010 | 3 | | 5 | 4 | 33 | <5 | 4 | <0.2 |
| 06/04/86 | 1015 | 3.1 | 18 | | | | | | |
| 06/26/86 | 1800 | 2.9 | 8 | 5 | 17 | 14 | <5 | 13 | <0.5 |
| 08/05/86 | 1015 | 2.3 | <5 | 5 | 1 | 9 | <5 | 15 | <0.5 |
| 09/02/86 | 1345 | 1.6 | 7 | 3 | 3 | 9 | <5 | 9 | <0.5 |
| 09/28/86 | 1056 | 3.7 | 25 | 6 | 5 | 12 | <5 | 13 | <0.5 |
| 11/03/86 | | 2.3 | 30 | 3 | 5 | <5 | <5 | <1 | |
| 12/04/86 | 1000 | 2.1 | 8 | <1 | <1 | 6 | <5 | <1 | <0.5 |
| 01/03/87 | 0925 | 2.0 | 45 | 5 | 3 | 11 | <5 | 9 | <0.5 |
| 01/30/87 | 1325 | 2.6 | 7 | | | | | | |
| 02/27/87 | 1505 | 3.9 | | | | | | | |
| 04/01/87 | 1250 | 5.3 | | | | | | | |
| 05/01/87 | 1615 | 4.0 | | | | | | | |
| 06/01/87 | 1650 | 3.1 | 10 | | | | | | |
| 07/01/87 | 0905 | 3.1 | 18 | | | | | | |
| 07/31/87 | 1000 | 2.1 | 12 | | | | | | |
| 09/01/87 | 1015 | 1.9 | 10 | | | | | | |
| 10/01/87 | 1035 | 2.9 | 19 | | | | | | |
| 11/03/87 | 1605 | 2.1 | 19 | | | | | | |
| 12/01/87 | 1620 | 2.4 | 12 | | | | | | |
| 01/05/88 | 1125 | 2.4 | 23 | | | | | | |
| 01/27/88 | 1545 | 2.1 | | | | | | | |
| 03/09/88 | 1615 | 2.7 | | | | | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 1 | | | | | | | |
| | MED | 2.5 | | | | | | | |
| | MAX | 4 | | | | | | | |
| | # DATA | 6 | | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-10.....MER509 RICE DRAIN AT MALLARD ROAD (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|-----|----|----|
| | | ug/L | | | | | |
| | | Total Recoverable | | | | | |
| 86 WY* | MIN | 1.6 | <5 | 3 | 1 | 9 | 4 |
| | MED | 3 | 14 | 6 | 5 | 23 | 13 |
| | MAX | 5 | 37 | 28 | 19 | 78 | 15 |
| | # DATA | 12 | 9 | 9 | 9 | 9 | 5 |
| 87 WY* | MIN | 1.9 | 7 | <1 | <1 | <5 | <1 |
| | MED | 2.6 | 11 | 3 | 3 | 6 | <1 |
| | MAX | 5.3 | 45 | 5 | 5 | 11 | 9 |
| | # DATA | 11 | 8 | 3 | 3 | 3 | 3 |
| 88 WY* | MIN | 2.1 | 12 | | | | |
| | MED | 2.4 | 19 | | | | |
| | MAX | 2.9 | 23 | | | | |
| | # DATA | 6 | 4 | | | | |
| TOTAL | MIN | 1 | <5 | <1 | <1 | <5 | <1 |
| | MED | 2.6 | 14 | 5 | 4.5 | 13 | 9 |
| | MAX | 5.3 | 45 | 28 | 19 | 78 | 15 |
| | # DATA | 35 | 21 | 12 | 12 | 12 | 8 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-11.....MER521 BOUNDARY DRAIN AT DEPARTMENT OF FISH AND GAME PUMP

LOCATIONLatitude 37 06'32", Longitude 120 46'45"
 In NE 1/4, SE 1/4, NE 1/4, Sec. 32, T.9S., R.11E.,
 N of Henry Miller Road, 4.6 miles NE of Los Banos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 06/14/85 | 0915 | 1.0 | | | | | | | |
| 08/15/85 | 1040 | 1.0 | | | | | | | |
| 08/29/85 | 0800 | <1 | | | | | | | |
| 09/28/85 | 1210 | 1.0 | | | | | | | |
| 10/31/85 | 1130 | <1 | | | | | | | |
| 12/07/85 | 1350 | 1.0 | 16 | 9 | 1 | 17 | <5 | | <0.5 |
| 01/04/86 | 1210 | <1 | 19 | 11 | 1 | 33 | <5 | | <0.2 |
| 01/14/86 | 1500 | <1 | 11 | 3 | 2 | 23 | <5 | | <0.5 |
| 03/02/86 | 1215 | <1 | 8 | 4 | 2 | 7 | <5 | | <0.5 |
| 04/02/86 | | <1 | | | | | | | |
| 04/03/86 | | 12 | 6 | | | | | | |
| 04/26/86 | 1555 | <1 | | 9 | 4 | 15 | <5 | 14 | <0.2 |
| 06/03/86 | 1600 | 0.9 | | | | | | | |
| 06/26/86 | 1400 | 1.3 | <5 | 5 | 16 | 9 | <5 | 19 | <0.5 |
| 08/04/86 | 1620 | 1.1 | <5 | 8 | 1 | 8 | <5 | 17 | <0.5 |
| 09/02/86 | 1220 | 1.1 | <5 | 4 | 2 | 5 | <5 | 14 | <0.5 |
| 09/27/86 | 1540 | | <5 | 7 | 5 | 8 | <5 | 14 | <0.5 |
| 11/03/86 | 1400 | 1.5 | 4 | 6 | 6 | 7 | <5 | 7 | |
| 12/04/86 | 1500 | 1.6 | <5 | <1 | <1 | <5 | <5 | <1 | <0.5 |
| 01/02/87 | 1555 | 1.6 | 8 | 2 | <1 | <5 | <5 | 3 | <0.5 |
| 01/30/87 | 1230 | 0.5 | 15 | | | | | | |
| 02/27/87 | 1155 | 2.0 | | | | | | | |
| 04/01/87 | 1200 | 2.1 | | | | | | | |
| 05/01/87 | 1315 | 1.9 | | | | | | | |
| 06/01/87 | 1400 | 1.7 | 4 | | | | | | |
| 07/01/87 | 1015 | 1.8 | 4 | | | | | | |
| 07/31/87 | 1125 | 1.5 | | | | | | | |
| 09/01/87 | 1115 | 1.4 | | | | | | | |
| 10/01/87 | 1125 | 1.5 | 4 | | | | | | |
| 11/03/87 | 1315 | 0.5 | 6 | | | | | | |
| 12/01/87 | 1410 | 1.2 | 12 | | | | | | |
| 01/05/88 | 1245 | 0.3 | | | | | | | |
| 01/27/88 | 1635 | 0.5 | | | | | | | |
| 03/09/88 | 1325 | 1.9 | | | | | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | <1 | | | | | | | |
| | MED | 1 | | | | | | | |
| | MAX | 1 | | | | | | | |
| | # DATA | 4 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 1 | <5 | 3 | 1 | 5 | | 14 | |
| | MED | 1 | 6 | 7 | 2 | 9 | | 14 | |
| | MAX | 12 | 19 | 11 | 16 | 33 | | 19 | |
| | # DATA | 12 | 9 | 9 | 9 | 9 | | 5 | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-11.....MER521 BOUNDARY DRAIN AT DEPARTMENT OF FISH AND GAME PUMP (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|----|----|----|
| | | ug/L | | | | | |
| | | Total Recoverable | | | | | |
| 87 WY* | MIN | 0.5 | 4 | <1 | <1 | <5 | <1 |
| | MED | 1.6 | 4 | 2 | <1 | <5 | 3 |
| | MAX | 2.1 | 15 | 6 | 6 | 7 | 7 |
| | # DATA | 11 | 6 | 3 | 3 | 3 | 3 |
| 88 WY* | MIN | 0.3 | 4 | | | | |
| | MED | 0.9 | 6 | | | | |
| | MAX | 1.9 | 12 | | | | |
| | # DATA | 6 | 3 | | | | |
| TOTAL | MIN | <1 | 4 | <1 | <1 | <5 | <1 |
| | MED | 1.1 | 5 | 6 | 2 | 8 | 14 |
| | MAX | 12 | 19 | 11 | 16 | 33 | 19 |
| | # DATA | 33 | 18 | 12 | 12 | 12 | 8 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-12.....MER528 SALT SLOUGH DITCH AT HEREFORD ROAD

LOCATIONLatitude 37 08' 30", Longitude 120 45' 17"
 NW 1/4, NE 1/4, NW 1/4, Sec. 22, T.9S., R.11E.,
 3.0 miles N on Hereford Road from Henry Miller Road.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|------|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 06/14/85 | 0935 | 0.0 | | | | | | | |
| 07/02/85 | 1010 | 1.0 | | | | | | | |
| 08/15/85 | 1100 | 1.0 | | | | | | | |
| 08/29/85 | 0820 | <1.0 | | | | | | | |
| 09/28/85 | 1235 | 1.0 | | | | | | | |
| 10/31/85 | 1150 | <1.0 | | | | | | | |
| 12/07/85 | 1405 | 1.0 | 12 | <1 | 2 | 5 | <5 | | <0.5 |
| 01/04/86 | 1230 | 1.0 | 7 | <1 | 3 | 15 | <5 | | <0.2 |
| 01/14/86 | 1550 | 1.0 | 10 | <1 | <1 | 6 | <5 | | 0.6 |
| 02/07/86 | 0935 | 1.0 | 6 | 2 | 3 | 9 | <5 | | <0.5 |
| 02/17/86 | 0805 | 1.0 | <5 | 5 | 27 | 18 | <5 | | <0.5 |
| 03/02/86 | 1240 | 1.0 | 6 | 5 | 4 | 13 | <5 | | <0.5 |
| 04/02/86 | | <1.0 | | | | | | | |
| 04/19/86 | 0915 | <1.0 | <5 | 3 | 13 | 17 | <5 | | <0.5 |
| 04/26/86 | 1540 | <1.0 | | 3 | 3 | 5 | <5 | 8 | <0.2 |
| 05/13/86 | 1045 | <1.0 | <5 | 1 | 2 | 6 | <5 | | <0.5 |
| 06/03/86 | 1540 | 0.8 | 4 | 10 | <1 | 6 | <5 | | <0.5 |
| 06/16/86 | 1700 | 3.6 | <5 | 8 | 22 | 11 | <5 | 23 | <0.5 |
| 06/26/86 | 1345 | 1.2 | <5 | 5 | 5 | 10 | <5 | 22 | <0.5 |
| 08/04/86 | 1600 | 1.3 | <5 | 5 | 1 | 9 | <5 | 21 | <0.5 |
| 09/02/86 | 1210 | 0.9 | <5 | 5 | 4 | 7 | <5 | 22 | <0.5 |
| 09/27/86 | 1525 | | <5 | 5 | 7 | 8 | <5 | 13 | <0.5 |
| 11/03/86 | 1415 | 1.1 | 2 | 6 | 6 | 7 | <5 | 8 | |
| 12/04/86 | | 1.2 | <5 | <1 | <1 | <5 | <5 | <1 | <0.5 |
| 01/02/87 | 1540 | 1.2 | 8 | 2 | 1 | <5 | <5 | 2 | <0.5 |
| 01/30/87 | 1210 | 2.0 | 5 | | | | | | |
| 02/27/87 | 1140 | 2.8 | | | | | | | |
| 04/01/87 | 1145 | 2.2 | | | | | | | |
| 05/01/87 | 1305 | 2.0 | | | | | | | |
| 06/01/87 | 1345 | 2.0 | 3 | | | | | | |
| 07/01/87 | 1045 | 1.0 | 4 | | | | | | |
| 07/31/87 | 1150 | 1.4 | 3 | | | | | | |
| 09/01/87 | 1135 | 1.0 | 3 | | | | | | |
| 10/01/87 | 1140 | 1.1 | 3 | | | | | | |
| 11/03/87 | 1300 | 0.6 | 4 | | | | | | |
| 12/01/87 | 1425 | 0.6 | 7 | | | | | | |
| 01/05/88 | 1230 | 1.1 | 6 | | | | | | |
| 01/27/88 | 1655 | 0.4 | | | | | | | |
| 03/09/88 | 1310 | 1.7 | | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-12.....MER528 SALT SLOUGH DITCH AT HEREFORD ROAD (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|-----|----|----|----|----|
| | | ug/L | | | | | |
| | | Total Recoverable | | | | | |
| 85 WY* | MIN | <1 | | | | | |
| | MED | 1 | | | | | |
| | MAX | 1 | | | | | |
| | # DATA | 5 | | | | | |
| 86 WY* | MIN | 0.8 | 4.4 | <1 | <1 | 5 | 8 |
| | MED | 1 | <5 | 5 | 3 | 9 | 22 |
| | MAX | 3.6 | 12 | 10 | 27 | 18 | 23 |
| | # DATA | 16 | 14 | 15 | 15 | 15 | 6 |
| 87 WY* | MIN | 1 | 2 | <1 | <1 | <5 | <1 |
| | MED | 1.4 | 3 | 2 | 1 | <5 | 2 |
| | MAX | 2.8 | 8 | 6 | 6 | 7 | 8 |
| | # DATA | 11 | 8 | 3 | 3 | 3 | 3 |
| 88 WY* | MIN | 0.4 | 3 | | | | |
| | MED | 0.9 | 5 | | | | |
| | MAX | 1.7 | 7 | | | | |
| | # DATA | 6 | 4 | | | | |
| TOTAL | MIN | <1 | 2 | <1 | <1 | <5 | <1 |
| | MED | 1 | 3 | 4 | 3 | 8 | 13 |
| | MAX | 3.6 | 12 | 10 | 27 | 18 | 23 |
| | # DATA | 38 | 36 | 18 | 18 | 18 | 9 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX I-13.....MER513 GARZAS CREEK AT HUNT ROAD

LOCATION Latitude 37 13'01", Longitude 120 59'36"
 In SE 1/4, SE 1/4, SE 1/4, Sec. 20, T.8S., R.9E.,
 2.4 miles S of Gustine on W side of Hunt Rd.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|-----|-----|----|----|------|
| ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 08/14/85 | 1625 | 5.0 | | | | | | | |
| 08/29/85 | 1100 | 4.0 | | | | | | | |
| 09/27/85 | 1755 | 4.0 | | | | | | | |
| 10/30/85 | 1510 | 7.0 | | | | | | | |
| 12/07/85 | 1705 | 2.0 | 7 | 5 | 2 | 8 | <5 | | <0.5 |
| 01/03/86 | 1710 | 2.0 | <5 | 3 | 3 | <5 | <5 | | <0.2 |
| 01/14/86 | 1140 | 1.0 | <5 | <1 | 2 | 8 | <5 | | <0.5 |
| 02/16/86 | 1300 | 1.0 | <5 | 4 | 7 | 22 | <5 | | <0.5 |
| 03/02/86 | 1415 | 1.0 | <5 | 4 | 2 | 8 | <5 | | <0.5 |
| 04/02/86 | | <1 | | | | | | | |
| 06/03/86 | 1155 | 3.5 | | | | | | | |
| 06/26/86 | 1050 | 5.7 | <5 | 5 | 10 | 6 | <5 | 14 | <0.5 |
| 08/04/86 | 1215 | 0.9 | <5 | 6 | 4 | 12 | <5 | 27 | <0.5 |
| 09/02/86 | 1315 | 0.5 | <5 | 6 | 5 | 7 | <5 | 14 | <0.5 |
| 09/27/86 | 1205 | 1.0 | <5 | 4 | 6 | 10 | <5 | 7 | <0.5 |
| 11/04/86 | 0910 | 1.4 | <5 | 5 | 6 | 6 | <5 | 1 | |
| 12/04/86 | | 1.9 | <5 | <1 | <1 | <5 | <5 | <1 | <0.5 |
| 01/02/87 | 1210 | 1.0 | <5 | 1 | 1 | <5 | <5 | <1 | <0.5 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 4 | | | | | | | |
| | MED | 4 | | | | | | | |
| | MAX | 5 | | | | | | | |
| | # DATA | 3 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | <5 | <1 | 2 | <5 | | 7 | |
| | MED | 1 | <5 | 4 | 4 | 8 | | 14 | |
| | MAX | 7 | 7 | 6 | 10 | 22 | | 27 | |
| | # DATA | 12 | 9 | 9 | 9 | 9 | | 4 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 1.4 | <5 | 1 | 1 | <5 | | <1 | |
| | MAX | 1.9 | <5 | 5 | 6 | 6 | | 1 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | <1 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 1.7 | <5 | 4 | 3.5 | 7.5 | | 7 | |
| | MAX | 7 | 7 | 6 | 10 | 22 | | 27 | |
| | # DATA | 18 | 12 | 12 | 12 | 12 | | 7 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

APPENDIX E

Trace Element Water Quality Data for Internal Flow Monitoring Stations Listed in Order by Map Index Number

| Map Index | RWCB Site I.D. | Site Name | Page |
|-----------|----------------|--------------------------------------|------|
| T-1 | MER510 | CCID Main @ Russell Avenue | E-2 |
| T-2 | MER511 | CCID Main @ Almond Drive | E-4 |
| T-3 | MER512 | CCID Main @ Gun Club Road | E-5 |
| T-4 | MER540 | Santa Fe Canal @ Hwy 152 | E-6 |
| T-5 | MER519 | Santa Fe Canal @ Henry Miller Rd. | E-8 |
| T-6 | MER517 | Santa Fe Canal @ Gun Club Rd. | E-9 |
| T-7 | MER527 | San Luis Canal @ Hwy 152 | E-11 |
| T-8 | MER514 | Los Banos Creek @ Gun Club Rd. | E-13 |
| T-9 | MER518 | Eagle Ditch | E-14 |
| T-10 | MER516 | Mud Slough (North) @ Gun Club Rd. | E-16 |
| T-11 | MER515 | Fremont Canal @ Gun Club Rd. | E-18 |
| T-12 | MER553 | Gustine Sewage Treatment Plant Ditch | E-20 |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-1.....MER510 CCID MAIN CANAL AT RUSSELL AVENUE

LOCATIONLatitude 36 55'28", Longitude 120 37'30"
 In SE 1/4, SE 1/4, SE 1/4, Sec. 33, T.11S., R.12E.,
 2.7 miles S of Dos Palos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|-----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 08/15/85 | 0815 | <1 | | | | | | | |
| 08/28/85 | 1305 | <1 | | | | | | | |
| 09/28/85 | 0955 | <1 | | | | | | | |
| 10/31/85 | 0900 | 1 | | | | | | | |
| 12/07/85 | 1010 | 2 | 5 | <1 | 1 | 5 | <5 | | <0.5 |
| 01/04/86 | 0935 | 16 | 8 | 7 | 6 | 7 | <5 | | <0.2 |
| 03/02/86 | 0940 | <1 | <5 | 2 | <1 | 4 | <5 | | <0.5 |
| 04/27/86 | 0900 | <1 | | 2 | 8 | 5 | <5 | 4 | <0.2 |
| 06/04/86 | 0910 | 1.2 | | | | | | | |
| 06/26/86 | 1655 | 1.7 | <5 | 5 | 13 | 9 | <5 | 13 | <0.5 |
| 08/05/86 | 0915 | 2.6 | <5 | 4 | 1 | 5 | <5 | 8 | <0.5 |
| 09/02/86 | 1640 | 1.3 | <5 | 3 | 2 | <5 | <5 | 9 | <0.5 |
| 09/28/86 | 1025 | 0.7 | 8 | 3 | 3 | 5 | <5 | 8 | <0.5 |
| 11/03/86 | 1105 | 1.3 | <5 | 4 | 5 | <5 | <5 | 1 | |
| 12/04/86 | 1120 | 1.5 | <5 | <1 | <1 | <5 | <5 | <1 | <0.5 |
| 01/03/87 | 0900 | 3.6 | <5 | 3 | 1 | <5 | <5 | 3 | <0.5 |
| 01/30/87 | 1345 | 1.6 | | | | | | | |
| 02/27/87 | 1400 | 3.0 | | | | | | | |
| 04/01/87 | 1335 | 5.2 | | | | | | | |
| 05/01/87 | 1515 | 2.3 | | | | | | | |
| 06/01/87 | 1555 | 2.2 | | | | | | | |
| 07/01/87 | 0805 | 2.5 | | | | | | | |
| 07/31/87 | 0850 | 1.5 | | | | | | | |
| 09/01/87 | 0910 | 2.2 | | | | | | | |
| 10/01/87 | 0935 | 1.0 | | | | | | | |
| 11/03/87 | 1500 | 0.8 | | | | | | | |
| 12/01/87 | 1555 | 2.1 | | | | | | | |
| 01/05/88 | 1030 | 3.6 | | | | | | | |
| 01/27/88 | 1435 | 1.5 | | | | | | | |
| 03/09/88 | 1520 | 3.5 | | | | | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | <1 | | | | | | | |
| | MED | <1 | | | | | | | |
| | MAX | <1 | | | | | | | |
| | # DATA | 3 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 0.7 | <5 | <1 | <1 | <5 | | 4 | |
| | MED | 1.3 | <5 | 3 | 2.5 | 5 | | 8 | |
| | MAX | 16 | 8 | 7 | 13 | 9 | | 13 | |
| | # DATA | 10 | 7 | 8 | 8 | 8 | | 5 | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-1.....MER510 CCID MAIN CANAL AT RUSSELL AVENUE (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|----|----|----|
| | |ug/L..... | | | | | |
| | | Total Recoverable | | | | | |
| 87 WY* | MIN | 1.3 | <5 | <1 | <1 | <5 | <1 |
| | MED | 2.2 | <5 | 3 | 1 | <5 | 3 |
| | MAX | 5.2 | <5 | 4 | 5 | <5 | 3 |
| | # DATA | 11 | 3 | 3 | 3 | 3 | 3 |
| 88 WY* | MIN | 0.8 | | | | | |
| | MED | 1.8 | | | | | |
| | MAX | 3.6 | | | | | |
| | # DATA | 6 | | | | | |
| TOTAL | MIN | 0.7 | <5 | <1 | <1 | <5 | <1 |
| | MED | 1.6 | <5 | 3 | 2 | 5 | 6 |
| | MAX | 16 | 8 | 7 | 13 | 9 | 13 |
| | # DATA | 30 | 10 | 11 | 11 | 11 | 8 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-2.....MER511 CCID AT ALMOND DRIVE

LOCATIONLatitude 36 59'60", Longitude 120 49'02"
 In NW 1/4, NW 1/4, NW 1/4, Sec. 7, T.11S., R.11E.,
 1.0 miles E of Mercy Springs Rd., 4.2 miles S of Los Banos

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|-----|-----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 08/15/85 | 0640 | 6.0 | | | | | | | |
| 08/28/85 | 1645 | <1 | | | | | | | |
| 09/28/85 | 0750 | 2.0 | | | | | | | |
| 10/31/85 | 0645 | 1.0 | | | | | | | |
| 12/07/85 | 0710 | 1.0 | 8 | 3 | 1 | <5 | <5 | | <0.5 |
| 01/04/86 | 0715 | 1.0 | 6 | 7 | <1 | <5 | <5 | | <0.2 |
| 02/01/86 | 1450 | 1.0 | <5 | 2 | <1 | <5 | <5 | | <0.5 |
| 02/16/86 | 1610 | 1.0 | <5 | <1 | 8 | <5 | <5 | | <0.5 |
| 03/02/86 | 0730 | 2.0 | <5 | 3 | 3 | 12 | <5 | | <0.5 |
| 04/02/86 | | <1 | | | | | | | |
| 04/27/86 | 0715 | <1 | | 3 | 4 | 6 | <5 | 5 | <0.2 |
| 06/04/86 | 0720 | 7.3 | | | | | | | |
| 06/26/86 | 1515 | 4.1 | <5 | 9 | 18 | 21 | <5 | 13 | <0.5 |
| 08/05/86 | 0750 | 1.2 | <5 | 3 | <1 | 6 | <5 | 6 | <0.5 |
| 09/02/86 | 1520 | 1.4 | <5 | 4 | 4 | 5 | <5 | 9 | <0.5 |
| 09/28/86 | 0735 | 1.8 | <5 | 4 | 6 | 9 | <5 | 13 | <0.5 |
| 11/03/86 | 1220 | 1.7 | <5 | 3 | 3 | <5 | <5 | <1 | |
| 01/03/87 | 0720 | 1.9 | <5 | 4 | <1 | <5 | <5 | 1 | <0.5 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | <1 | | | | | | | |
| | MED | 2 | | | | | | | |
| | MAX | 6 | | | | | | | |
| | # DATA | 3 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | <5 | <1 | <1 | <5 | | 5 | |
| | MED | 1 | <5 | 3 | 3.5 | 5.5 | | 9 | |
| | MAX | 7.3 | 8 | 9 | 18 | 21 | | 13 | |
| | # DATA | 13 | 9 | 10 | 10 | 10 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1.7 | <5 | 3 | <1 | <5 | | <1 | |
| | MED | 1.8 | <5 | 3.5 | 2 | <5 | | 1 | |
| | MAX | 1.9 | <5 | 4 | 3 | <5 | | 1 | |
| | # DATA | 2 | 2 | 2 | 2 | 2 | | 2 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | <1 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 1.3 | <5 | 3 | 3 | 2.5 | | 6 | |
| | MAX | 7.3 | 8 | 9 | 18 | 21 | | 13 | |
| | # DATA | 18 | 11 | 12 | 12 | 12 | | 7 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-3.....MER512 CCID MAIN CANAL AT GUN CLUB ROAD

LOCATION Latitude 37 13'54", Longitude 121 00'21"
 In SW 1/4, SE 1/4, SW 1/4, Sec. 17, T.8S., R.9E.,
 0.7 miles E of Hunt Rd. on Gun Club Rd.,
 1.5 miles S of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|-----|----|----|------|
| ug/L | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 08/14/85 | 1640 | 4.0 | | | | | | | |
| 08/29/85 | 1050 | 4.0 | | | | | | | |
| 09/27/85 | 1810 | 3.0 | | | | | | | |
| 10/30/85 | 1530 | 5.0 | | | | | | | |
| 12/07/85 | 1715 | 2.0 | 7 | <1 | 1 | 5 | <5 | | <0.5 |
| 01/04/86 | 1720 | 1.0 | 5 | 3 | 2 | 6 | <5 | | <0.2 |
| 02/16/86 | 1315 | <1 | <5 | <1 | 5 | 11 | <5 | | <0.5 |
| 03/01/86 | 1430 | 2.0 | <5 | 6 | 1 | 5 | <5 | | <0.5 |
| 04/02/86 | | <1 | | | | | | | |
| 04/26/86 | 1205 | <1 | | 4 | 22 | 20 | <5 | 9 | <0.2 |
| 06/03/86 | 1205 | 3.1 | | | | | | | |
| 06/26/86 | 1100 | 5.2 | <5 | 8 | 34 | 13 | <5 | 22 | <0.5 |
| 08/04/86 | 1245 | 0.9 | <5 | 13 | 6 | 28 | 8 | 39 | <0.5 |
| 09/02/86 | 1325 | 0.7 | <5 | 4 | 3 | 5 | <5 | 9 | <0.5 |
| 09/27/86 | 1220 | 0.9 | <5 | 3 | 3 | 5 | <5 | 7 | <0.5 |
| 11/04/86 | 0900 | 1.0 | <5 | 3 | 4 | <5 | <5 | <1 | |
| 12/04/86 | | 1.7 | <5 | <1 | <1 | 5 | <5 | <1 | <0.5 |
| 01/02/87 | 1225 | 1.1 | <5 | 3 | 2 | 5 | <5 | 3 | <0.5 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 3 | | | | | | | |
| | MED | 4 | | | | | | | |
| | MAX | 4 | | | | | | | |
| | # DATA | 3 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | <5 | <1 | 1 | 5 | | 7 | |
| | MED | 1 | <5 | 4 | 3 | 6 | | 9 | |
| | MAX | 5.2 | 7 | 13 | 34 | 28 | | 39 | |
| | # DATA | 12 | 8 | 9 | 9 | 9 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1.1 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 1.4 | <5 | 2.5 | 3 | 2.5 | | <1 | |
| | MAX | 1.7 | 5 | 3 | 6 | 5 | | 3 | |
| | # DATA | 4 | 4 | 4 | 4 | 4 | | 3 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | <1 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 1.1 | <5 | 3 | 3 | 5 | | 8 | |
| | MAX | 5.2 | 7 | 13 | 34 | 28 | | 39 | |
| | # DATA | 19 | 12 | 13 | 13 | 13 | | 8 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-4.....MER540 SANTA FE CANAL AT HIGHWAY 152

LOCATIONLatitude 37° 03'22", Longitude 120° 47'11"
 In SW 1/4, SW 1/4, SE 1/4, Sec. 17, T.10S., R.11E.,
 N side of Hwy. 152, 3.5 miles E of Los Banos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|----|------|
| ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1220 | 31 | | | | | | | |
| 06/03/85 | 1135 | 17 | | | | | | | |
| 07/02/85 | 0850 | 27 | | | | | | | |
| 08/15/85 | 0910 | 17 | | | | | | | |
| 08/28/85 | 1720 | 21 | | | | | | | |
| 09/28/85 | 1045 | 4.0 | | | | | | | |
| 10/31/85 | 1005 | 14 | | | | | | | |
| 12/07/85 | 1205 | 27 | 11 | 12 | 10 | 28 | <5 | | <0.5 |
| 01/04/86 | 1030 | 30 | 21 | 20 | 18 | 22 | <5 | | <0.2 |
| 01/14/86 | 1315 | 18 | 10 | 7 | 15 | 34 | <5 | | <0.5 |
| 03/02/86 | 1025 | 31 | 14 | 10 | 16 | 23 | <5 | | <0.5 |
| 04/02/86 | | 33 | | | | | | | |
| 04/19/86 | 0800 | 34 | 6 | 12 | 15 | 25 | <5 | | <0.5 |
| 04/27/86 | 1030 | 36 | | 8 | 17 | 31 | <5 | 9 | <0.2 |
| 05/13/86 | 0945 | 27 | 6 | 8 | 14 | 22 | <5 | | <0.5 |
| 06/04/86 | 1040 | 24 | 10 | 9 | 2 | 11 | <5 | | <0.5 |
| 06/17/86 | 0910 | 29 | <5 | 7 | 21 | 15 | <5 | 19 | <0.5 |
| 06/26/86 | 1830 | 28 | <5 | 6 | 23 | 13 | <5 | 17 | <0.5 |
| 08/05/86 | 1040 | 25 | <5 | 7 | 5 | 13 | <5 | 23 | <0.5 |
| 09/02/86 | 1400 | 23 | <5 | 9 | 11 | 26 | <5 | 37 | <0.5 |
| 09/27/86 | 1655 | 11 | <5 | 7 | 9 | 10 | <5 | 15 | <0.5 |
| 11/03/86 | | 19 | <5 | 6 | 14 | 8 | <5 | 9 | |
| 12/04/86 | 1320 | 39 | <5 | 9 | 28 | 20 | <5 | 24 | <0.5 |
| 01/03/87 | 0945 | 36 | 12 | 5 | 10 | 10 | <5 | 10 | <0.5 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 4 | | | | | | | |
| | MED | 19 | | | | | | | |
| | MAX | 31 | | | | | | | |
| | # DATA | 6 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 11 | <5 | 6 | 2 | 10 | | 9 | |
| | MED | 27 | 6 | 8 | 15 | 22 | | 18 | |
| | MAX | 36 | 21 | 20 | 23 | 34 | | 37 | |
| | # DATA | 15 | 12 | 13 | 13 | 13 | | 6 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 19 | <5 | 5 | 10 | 8 | | 9 | |
| | MED | 36 | <5 | 6 | 14 | 10 | | 10 | |
| | MAX | 39 | 12 | 9 | 28 | 20 | | 24 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-4.....MER540 SANTA FE CANAL AT HIGHWAY 152 (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|-------------------|--------|----|----|----|----|----|----|
|ug/L..... | | | | | | | |
| Total Recoverable | | | | | | | |
| TOTAL | MIN | 4 | <5 | 5 | 2 | 8 | 9 |
| | MED | 27 | 26 | 8 | 15 | 21 | 17 |
| | MAX | 39 | 21 | 20 | 28 | 34 | 37 |
| | # DATA | 24 | 15 | 16 | 16 | 16 | 9 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-5.....MER519 SANTA FE CANAL AT HENRY MILLER AVENUE

LOCATIONLatitude 37 05'59", Longitude 120 49'44"
 In NW 1/4, NE 1/4, NW 1/4, Sec. 1, T.10S., R.10E.,
 0.3 miles E of Lander Ave., 3.0 miles N of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 07/02/85 | 0925 | 27 | | | | | | | |
| 08/15/85 | 1005 | 14 | | | | | | | |
| 08/29/85 | 0725 | 17 | | | | | | | |
| 09/28/85 | 1135 | 3.0 | | | | | | | |
| 10/31/85 | 1045 | 11 | | | | | | | |
| 12/07/85 | 1300 | 26 | 14 | 14 | 5 | 20 | <5 | | <0.5 |
| 01/04/86 | 1130 | 36 | 17 | 18 | 17 | 12 | <5 | | <0.2 |
| 01/14/86 | 1345 | 22 | 32 | 3 | 9 | 27 | <5 | | <0.5 |
| 03/02/86 | 1120 | 27 | 14 | 3 | 6 | 12 | <5 | | <0.5 |
| 04/26/86 | 1650 | 35 | | 9 | 22 | 33 | <5 | 10 | <0.2 |
| 06/03/86 | 1640 | 29 | | | | | | | |
| 06/26/86 | 1435 | 24 | <5 | 7 | 38 | 20 | <5 | 22 | <0.5 |
| 08/05/86 | 1105 | 25 | <5 | 9 | 7 | 20 | <5 | 30 | <0.5 |
| 09/02/86 | 1310 | 17 | <5 | 6 | 9 | 16 | <5 | 23 | <0.5 |
| 09/27/86 | 1635 | 2.2 | <5 | 7 | 11 | 18 | <5 | 24 | <0.5 |
| 11/03/86 | 1320 | 2.5 | <5 | 8 | 16 | 19 | <5 | 9 | |
| 12/04/86 | 1350 | 37 | <5 | <1 | <1 | <5 | <5 | <1 | <0.5 |
| 01/02/87 | 1645 | 30 | 10 | 3 | 6 | 6 | <5 | 1 | <0.5 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 3 | | | | | | | |
| | MED | 16 | | | | | | | |
| | MAX | 27 | | | | | | | |
| | # DATA | 4 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 2.2 | <5 | 3 | 5 | 12 | | 10 | |
| | MED | 25 | 10 | 7 | 9 | 20 | | 23 | |
| | MAX | 36 | 32 | 18 | 38 | 33 | | 30 | |
| | # DATA | 11 | 8 | 9 | 9 | 9 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 2.5 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 30 | <5 | 3 | 6 | 6 | | 1 | |
| | MAX | 37 | 10 | 8 | 16 | 19 | | 9 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | 2.2 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 25 | <5 | 7 | 9 | 19 | | 16 | |
| | MAX | 37 | 32 | 18 | 38 | 33 | | 30 | |
| | # DATA | 18 | 11 | 12 | 12 | 12 | | 8 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-6.....MER517 SANTA FE CANAL AT GUN CLUB ROAD

LOCATIONLatitude 37 13'53", Longitude 120 54'16"
 In. NE 1/4, NE 1/4, NE 1/4, Sec. 19, T.8S., R.10E.,
 4.9 miles E of Hunt Rd., 5.4 miles SE of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|------|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 06/13/85 | 0915 | 35 | | | | | | | |
| 07/02/85 | 1210 | 24 | | | | | | | |
| 08/14/85 | 1735 | 12 | | | | | | | |
| 08/29/85 | 1005 | 12 | | | | | | | |
| 09/28/85 | 1410 | <1 | | | | | | | |
| 10/30/85 | 1605 | 5.0 | | | | | | | |
| 12/07/85 | 1620 | 2.0 | 8 | 14 | 10 | 27 | <5 | | <0.5 |
| 01/04/86 | 1435 | 4.0 | 11 | 7 | 8 | 17 | <5 | | <0.2 |
| 01/14/86 | 1230 | 11 | 11 | 6 | 6 | 21 | <5 | | <0.5 |
| 02/16/86 | 1400 | 27 | 8 | 11 | 15 | 26 | <5 | | <0.5 |
| 03/02/86 | 1515 | 2.0 | <5 | 3 | 8 | 27 | <5 | | <0.5 |
| 04/02/86 | | 4.0 | | | | | | | |
| 04/26/86 | 1245 | 27 | | 9 | 18 | 33 | <5 | 12 | <0.2 |
| 06/03/86 | 1245 | 30 | | | | | | | |
| 06/26/86 | 1130 | 23 | <5 | 5 | 26 | 7 | <5 | 13 | <0.5 |
| 08/04/86 | 1320 | 21 | <5 | 12 | 11 | 43 | <5 | 41 | <0.5 |
| 09/02/86 | 1350 | 9.9 | <5 | 6 | 11 | 17 | <5 | 21 | <0.5 |
| 09/27/86 | 1300 | 1.2 | <5 | 6 | 17 | 25 | <5 | 23 | <0.5 |
| 11/04/86 | 0830 | 1.2 | 7 | 5 | 11 | 12 | <5 | 3 | |
| 12/04/86 | | 1.2 | <5 | <1 | 10 | 11 | <5 | <1 | <0.5 |
| 01/02/87 | 1310 | 1.1 | 9 | 4 | 3 | 6 | <5 | 5 | <0.5 |
| 02/24/88 | | 1.5 | | | 10 | 10 | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | <1 | | | | | | | |
| | MED | 12 | | | | | | | |
| | MAX | 35 | | | | | | | |
| | # DATA | 5 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 1.2 | <5 | 3 | 6 | 7 | | 12 | |
| | MED | 9.9 | <5 | 6.5 | 11 | 25.6 | | 21 | |
| | MAX | 30 | 11 | 14 | 26 | 43 | | 41 | |
| | # DATA | 13 | 9 | 10 | 10 | 10 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1.1 | <5 | <1 | 3 | 6 | | <1 | |
| | MED | 1.2 | 7 | 4 | 10 | 11 | | 3 | |
| | MAX | 1.2 | 9 | 5 | 11 | 12 | | 5 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 1.5 | | | 10 | 10 | | | |
| | MED | 1.5 | | | 10 | 10 | | | |
| | MAX | 1.5 | | | 10 | 10 | | | |
| | # DATA | 1 | | | 1 | 1 | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-6.....MER517 SANTA FE CANAL AT GUN CLUB ROAD (cont.)

| DATE | Se | Mo | Cu | Cr | Ni | Zn |
|-------------------|--------|-----|----|----|------|------|
|ug/L..... | | | | | | |
| Total Recoverable | | | | | | |
| TOTAL | MIN | <1 | <5 | <1 | 3 | <1 |
| | MED | 7.5 | 6 | 6 | 10.5 | 12.5 |
| | MAX | 35 | 11 | 14 | 26 | 41 |
| | # DATA | 22 | 12 | 13 | 14 | 8 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-7.....MER527 SAN LUIS CANAL AT HIGHWAY 152

LOCATIONLatitude 36 03'33", Longitude 120 48'10"
 In SE 1/4, SW 1/4, SE 1/4, Sec. 18, T.10S., R.11E.,
 N side of Hwy 152, 2.5 miles E of Los Banos.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-------|----|----|----|----|----|-------|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1225 | 6 | | | | | | | |
| 06/03/85 | 1145 | 4 | | | | | | | |
| 07/02/85 | 0910 | 4 | | | | | | | |
| 08/15/85 | 0920 | 5 | | | | | | | |
| 08/28/85 | 1730 | 5 | | | | | | | |
| 09/28/85 | 1055 | 2 | | | | | | | |
| 10/31/85 | 1010 | 2 | | | | | | | |
| 12/07/85 | 1215 | 2 | 11 | 9 | 3 | 16 | <5 | | <0.5 |
| 01/04/86 | 1050 | 2 | <5 | 17 | 7 | 13 | <5 | | <0.2 |
| 03/02/86 | 1040 | 2 | 9 | 4 | 2 | 10 | <5 | | <0.5 |
| 04/02/86 | | <1 | | | | | | | |
| 04/19/86 | 0810 | 1 | 7 | 4 | 4 | 7 | <5 | | <0.5 |
| 04/27/86 | 1045 | 1 | | 3 | 8 | 10 | <5 | 6 | <0.2 |
| 05/13/86 | 1000 | <1.00 | <5 | <1 | 1 | 8 | <5 | | <0.5 |
| 06/04/86 | 1100 | 5.9 | | | | | | | |
| 06/17/86 | 0920 | 4.3 | <5 | | | | <5 | | <0.5 |
| 06/26/86 | 1845 | 2.8 | | | | | | | |
| 08/05/86 | 1050 | 2.4 | 9 | 3 | 4 | 7 | <5 | 4 | <0.5 |
| 09/02/86 | 1415 | 1.5 | <5 | 4 | 7 | 11 | <5 | 12 | <0.5 |
| 09/27/86 | 1710 | 2.2 | <5 | 10 | 15 | 17 | <5 | 26 | <0.5 |
| 11/03/86 | | 1.4 | <5 | 4 | 7 | <5 | <5 | <1.00 | |
| 12/04/86 | 1330 | 2.6 | <5 | <1 | <1 | <5 | <5 | 13 | <0.5 |
| 01/03/87 | 0955 | 3.2 | 9 | 3 | 3 | <5 | <5 | 7 | <0.5 |
| 02/27/87 | 1520 | 5.0 | | | | | | | |
| 04/01/87 | 1230 | 4.6 | | | | | | | |
| 05/01/87 | 1635 | 3.3 | | | | | | | |
| 06/01/87 | 1710 | 4.0 | | | | | | | |
| 07/01/87 | 0925 | 9.3 | | | | | | | |
| 07/31/87 | 1025 | 4.8 | | | | | | | |
| 09/01/87 | 1030 | 4.0 | | | | | | | |
| 10/01/87 | 1055 | 1.3 | | | | | | | |
| 11/03/87 | 1625 | 3.0 | | | | | | | |
| 12/01/87 | 1640 | 7.9 | | | | | | | |
| 01/05/88 | 1150 | 3.9 | | | | | | | |
| 01/27/88 | 1605 | 2.3 | | | | | | | |
| 03/09/88 | 1635 | 3.4 | | | | | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 2 | | | | | | | |
| | MED | 4.5 | | | | | | | |
| | MAX | 6 | | | | | | | |
| | # DATA | 6 | | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-7.....MER527 SAN LUIS CANAL AT HIGHWAY 152 (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|----|----|-------|
| | | ug/L | | | | | |
| | | Total Recoverable | | | | | |
| 86 WY* | MIN | <1 | <5 | <1 | 1 | 7 | 4 |
| | MED | 2 | <5 | 4 | 4 | 10 | 9 |
| | MAX | 5.9 | 11 | 17 | 15 | 17 | 26 |
| | # DATA | 14 | 9 | 9 | 9 | 9 | 4 |
| 87 WY* | MIN | 1.4 | <5 | <1 | <1 | <5 | <1.00 |
| | MED | 4 | <5 | 3 | 3 | <5 | 7 |
| | MAX | 9.3 | 9 | 4 | 7 | <5 | 13 |
| | # DATA | 10 | 3 | 3 | 3 | 3 | 3 |
| 88 WY* | MIN | 1.3 | | | | | |
| | MED | 3.2 | | | | | |
| | MAX | 7.9 | | | | | |
| | # DATA | 6 | | | | | |
| TOTAL | MIN | <1 | <5 | <1 | <1 | <5 | <1.00 |
| | MED | 3.1 | <5 | 4 | 4 | 9 | 7 |
| | MAX | 9.3 | 11 | 17 | 15 | 17 | 26 |
| | # DATA | 36 | 12 | 12 | 12 | 12 | 7 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-8.....MER514 LOS BANOS CREEK AT GUN CLUB ROAD

LOCATION Latitude 37 13'56", Longitude 120 56'30"
 In SW 1/4, SE 1/4, SE 1/4, Sec. 14, T.8S., R.9E.,
 2.8 miles E of Hunt Rd., 3.7 miles SE of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|----|----|----|------|
| ug/L | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 07/02/85 | 1300 | 2.0 | | | | | | | |
| 08/14/85 | 1725 | 3.0 | | | | | | | |
| 08/29/85 | 1035 | 3.0 | | | | | | | |
| 09/27/85 | 1825 | 2.0 | | | | | | | |
| 10/30/85 | 1540 | 1.0 | | | | | | | |
| 12/07/85 | 1650 | 1.0 | 9 | 3 | 2 | 14 | <5 | | <0.5 |
| 01/04/86 | 1510 | 1.0 | 9 | 10 | 5 | 10 | <5 | | <0.2 |
| 01/14/86 | 1310 | 1.0 | 12 | 2 | 4 | 12 | <5 | | <0.5 |
| 02/16/86 | 1330 | 1.0 | <5 | 6 | 15 | 45 | <5 | | <0.5 |
| 03/01/86 | 1445 | 1.0 | 5 | 3 | 4 | 15 | <5 | | <0.5 |
| 04/02/86 | | <1 | | | | | | | |
| 04/26/86 | 1220 | <1 | | 6 | 9 | 20 | <5 | 9 | <0.2 |
| 06/03/86 | 1220 | 1.7 | | | | | | | |
| 06/26/86 | 1115 | 3.8 | 5 | 7 | 22 | 9 | <5 | 14 | <0.5 |
| 08/04/86 | 1305 | 1.1 | <5 | 7 | 5 | 20 | <5 | 19 | <0.5 |
| 09/02/86 | 1340 | 0.7 | <5 | 5 | 6 | 9 | <5 | 15 | <0.5 |
| 09/27/86 | 1235 | 1.0 | <5 | 2 | 3 | <5 | <5 | 7 | <0.5 |
| 11/04/86 | 0850 | 0.9 | <5 | 3 | 4 | 7 | <5 | <1 | |
| 12/04/86 | | 1.1 | <5 | <1 | <1 | 6 | <5 | <1 | <0.5 |
| 01/02/87 | 1240 | 0.9 | <5 | 4 | 3 | 8 | <5 | 3 | <0.5 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 2.0 | | | | | | | |
| | MED | 2.5 | | | | | | | |
| | MAX | 3.0 | | | | | | | |
| | # DATA | 4 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | <5 | 2 | 2 | <5 | | 7 | |
| | MED | 1 | 5 | 5.5 | 5 | 13 | | 14 | |
| | MAX | 3.8 | 12 | 10 | 22 | 45 | | 19 | |
| | # DATA | 13 | 9 | 10 | 10 | 10 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 0.9 | <5 | <1 | <1 | 6 | | <1 | |
| | MED | 0.9 | <5 | 3 | 3 | 7 | | <1 | |
| | MAX | 1.1 | <5 | 4 | 4 | 8 | | 3 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | <1 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 1 | <5 | 4 | 4 | 10 | | 8 | |
| | MAX | 3.8 | 12 | 10 | 22 | 45 | | 19 | |
| | # DATA | 20 | 12 | 13 | 13 | 13 | | 8 | |

* Water year: extending from 1 October of one year to 1 October of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-9.....MER518 EAGLE DITCH AT GUN CLUB ROAD

LOCATIONLatitude 37 13'53", Longitude 120 55'55"
 In SE1/4, SE 1/4, SW 1/4, Sec. 13, T.8S., R.9E.,
 3.3 miles E of Hunt Road, 200 ft. E of Santa Fe Grade,
 4.2 miles SE of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 07/02/85 | 1155 | 19 | | | | | | | |
| 08/14/85 | 1810 | 13 | | | | | | | |
| 08/29/85 | 0955 | 12 | | | | | | | |
| 09/27/85 | 1840 | 1.0 | | | | | | | |
| 10/30/85 | 1550 | 5.0 | | | | | | | |
| 12/07/85 | 1610 | 2.0 | 8 | <1 | 3 | 13 | <5 | | <0.5 |
| 01/04/86 | 1425 | 1.0 | 5 | 8 | 8 | 22 | <5 | | <0.2 |
| 01/14/86 | 1250 | 1.0 | 9 | 4 | 5 | 15 | <5 | | <0.5 |
| 02/16/86 | 1350 | 1.0 | 8 | 19 | 13 | 46 | <5 | | <0.5 |
| 03/02/86 | 1500 | 2.0 | 6 | 4 | 6 | 13 | <5 | | <0.5 |
| 04/02/86 | | 3.0 | | | | | | | |
| 04/26/86 | 1230 | 2.0 | | 5 | 8 | 28 | <5 | 10 | <0.2 |
| 06/03/86 | 1230 | 1.7 | | | | | | | |
| 09/27/86 | 1250 | 1.0 | <5 | 2 | 2 | 5 | <5 | 6 | <0.5 |
| 11/04/86 | 0840 | 1.7 | <5 | 7 | 3 | 6 | <5 | <1 | |
| 12/04/86 | | 1.1 | <5 | <1 | <1 | 7 | <5 | <1 | <0.5 |
| 01/02/87 | 1255 | 0.8 | <5 | 2 | 2 | 5 | <5 | 2 | <0.5 |
| 02/24/88 | | 1.3 | | | 23 | 18 | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 1 | | | | | | | |
| | MED | 13 | | | | | | | |
| | MAX | 19 | | | | | | | |
| | # DATA | 4 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 1 | <5 | <1 | 2 | 5 | | 6 | |
| | MED | 1.9 | 7 | 4 | 6 | 15 | | 8 | |
| | MAX | 5 | 9 | 19 | 13 | 46 | | 10 | |
| | # DATA | 10 | 6 | 10 | 7 | 7 | | 2 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 0.8 | <5 | <1 | <1 | 5 | | <1 | |
| | MED | 1.1 | <5 | 2 | 2 | 6 | | 4 | |
| | MAX | 1.7 | <5 | 7 | 3 | 7 | | 2 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 1.3 | | | 23 | 18 | | | |
| | MED | 1.3 | | | 23 | 18 | | | |
| | MAX | 1.3 | | | 23 | 18 | | | |
| | # DATA | 1 | | | 1 | 1 | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-9.....MER518 EAGLE DITCH AT GUN CLUB ROAD (cont.)

| DATE | Se | Mo | Cu | Cr | Ni | Zn |
|-------|-------------------|-----|----|----|----|----|
| |ug/L..... | | | | | |
| | Total Recoverable | | | | | |
| TOTAL | MIN | 0.8 | <5 | <1 | <1 | 5 |
| | MED | 1.7 | 5 | 4 | 5 | 13 |
| | MAX | 19 | 9 | 19 | 23 | 46 |
| | # DATA | 18 | 9 | 10 | 11 | 11 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-10.....MER516 MUD SLOUGH AT GUN CLUB ROAD

LOCATIONLatitude 37 13'53", Longitude 120 53'54"
 In NE 1/4, NW 1/4, NW 1/4, Sec. 20, T.8S., R.10E.,
 5.4 miles E of Hunt Rd., on S side of Gun Club Rd.
 6 miles SE of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 07/02/85 | 1250 | 22 | | | | | | | |
| 08/14/85 | 1750 | 8.0 | | | | | | | |
| 08/29/85 | 1030 | 12 | | | | | | | |
| 09/28/85 | 1435 | 5.0 | | | | | | | |
| 10/30/85 | 1620 | 2.0 | | | | | | | |
| 12/07/85 | 1630 | 2.0 | 19 | 12 | 3 | 22 | <5 | | <0.5 |
| 01/04/86 | 1445 | 2.0 | 28 | 8 | 3 | 10 | <5 | | <0.2 |
| 01/14/86 | 1220 | 3.0 | 12 | 1 | 3 | 17 | <5 | | <0.5 |
| 02/16/86 | 1415 | 2.0 | 15 | 9 | | 19 | <5 | | <0.5 |
| 03/02/86 | 1525 | 2.0 | 9 | 2 | 3 | 10 | <5 | | 0.6 |
| 04/02/86 | | <1 | | | | | | | |
| 04/26/86 | 1255 | 2.0 | | 3 | 4 | 13 | <5 | 3 | <0.2 |
| 06/03/86 | 1300 | 5.2 | | | | | | | |
| 06/26/86 | 1140 | 15 | 13 | 5 | 25 | 10 | <5 | 18 | <0.5 |
| 08/04/86 | 1330 | 11 | 9 | 4 | <1 | 13 | <5 | 10 | <0.5 |
| 11/04/86 | 0820 | 1.7 | 24 | 2 | 4 | 6 | <5 | <1 | |
| 12/04/86 | | 1.5 | 68 | <1 | <1 | 8 | <5 | <1 | <0.5 |
| 01/02/87 | 1315 | 1.6 | 36 | 2 | 2 | 8 | <5 | 2 | <0.5 |
| 02/24/88 | | 1.4 | | | 5 | 8 | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 5 | | | | | | | |
| | MED | 10 | | | | | | | |
| | MAX | 22 | | | | | | | |
| | # DATA | 4 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | 9 | 1 | <1 | 10 | | 3 | |
| | MED | 2 | 13 | 4.5 | 3 | 13 | | 10 | |
| | MAX | 15 | 28 | 12 | 25 | 22 | | 18 | |
| | # DATA | 11 | 7 | 8.0 | 7 | 8 | | 3 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1.5 | 24 | <1 | <1 | 6 | | <1 | |
| | MED | 1.6 | 36 | 2 | 2 | 8 | | <1 | |
| | MAX | 1.7 | 68 | 2 | 4 | 8 | | 2 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 1.4 | | | 5 | 8 | | | |
| | MED | 1.4 | | | 5 | 8 | | | |
| | MAX | 1.4 | | | 5 | 8 | | | |
| | # DATA | 1 | | | 1 | 1 | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-10.....MER516 MUD SLOUGH AT GUN CLUB ROAD (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|-------------------|--------|----|----|----|----|----|-----|
|ug/L..... | | | | | | | |
| Total Recoverable | | | | | | | |
| TOTAL | MIN | <1 | 9 | <1 | <1 | 6 | <1 |
| | MED | 2 | 17 | 3 | 3 | 10 | 2.5 |
| | MAX | 22 | 68 | 12 | 25 | 22 | 18 |
| | # DATA | 19 | 10 | 11 | 11 | 12 | 6 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-11.....MERS15 FREMONT CANAL AT GUN CLUB ROAD

LOCATIONLatitude 37 13'54", Longitude 120 52'55"
 In SE 1/4, SW 1/4, SE 1/4, Sec. 15, T.8S., R.10E.,
 5.7 miles E of Hunt Rd., N side of Gun Club Rd., SE of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 07/02/85 | 1235 | 28 | | | | | | | |
| 08/14/85 | 1715 | 15 | | | | | | | |
| 08/29/85 | 1015 | 15 | | | | | | | |
| 09/28/85 | 1425 | 4.0 | | | | | | | |
| 10/30/85 | 1615 | 7.0 | | | | | | | |
| 12/07/85 | 1640 | 16 | 24 | 15 | 3 | 20 | <5 | | <0.5 |
| 01/04/86 | 1455 | 26 | 36 | 22 | 6 | 9 | <5 | | <0.2 |
| 01/14/86 | 1210 | 28 | 9 | 4 | 6 | 20 | <5 | | <0.5 |
| 02/16/86 | 1430 | 6.0 | 11 | 7 | 7 | 14 | <5 | | <0.5 |
| 03/01/86 | 1540 | 33 | 13 | 8 | 4 | 10 | 8 | | <0.5 |
| 04/02/86 | | 10 | | | | | | | |
| 04/26/86 | 1310 | 10 | | 4 | 4 | 20 | <5 | 4 | <0.2 |
| 06/03/86 | 1310 | 32 | | | | | | | |
| 06/15/86 | 1235 | 11 | | | | | | | |
| 06/26/86 | 1150 | 27 | <5 | 4 | 10 | <5 | <5 | 14 | <0.5 |
| 08/04/86 | 1340 | 24 | 5 | 6 | 2 | 19 | <5 | 20 | <0.5 |
| 09/02/86 | 1410 | 28 | 7 | 4 | 6 | 9 | <5 | 14 | <0.5 |
| 09/27/86 | 1315 | 16 | 8 | 5 | 11 | 16 | <5 | 8 | 0.5 |
| 11/04/86 | 0810 | 6.9 | 15 | 13 | 26 | 33 | <5 | 33 | |
| 12/04/86 | | 4.4 | <5 | <1 | <1 | 6 | <5 | <1 | <0.5 |
| 01/02/87 | 1325 | 31 | 12 | 4 | 9 | 7 | <5 | 4 | <0.5 |
| 02/24/88 | | 40 | | | 10 | 6 | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 4 | | | | | | | |
| | MED | 15 | | | | | | | |
| | MAX | 28 | | | | | | | |
| | # DATA | 4 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 6 | <5 | 4 | 2 | <5 | | 4 | |
| | MED | 20 | 9 | 5.5 | 6 | 15 | | 14 | |
| | MAX | 33 | 36 | 22 | 11 | 20 | | 20 | |
| | # DATA | 14 | 9 | 10 | 10 | 10 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 4.4 | <5 | <1 | <1 | 6 | | <1 | |
| | MED | 6.9 | 12 | 4 | 9 | 7 | | 4 | |
| | MAX | 31 | 15 | 13 | 26 | 33 | | 33 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 40 | | | 10 | 6 | | | |
| | MED | 40 | | | 10 | 6 | | | |
| | MAX | 40 | | | 10 | 6 | | | |
| | # DATA | 1 | | | 1 | 1 | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-11.....MER515 FREMONT CANAL AT GUN CLUB ROAD (cont.)

| DATE | Se | Mo | Cu | Cr | Ni | Zn |
|-------|-------------------|----|----|----|----|----|
| |ug/L..... | | | | | |
| | Total Recoverable | | | | | |
| TOTAL | MIN | 4 | <5 | <1 | <1 | <1 |
| | MED | 16 | 10 | 5 | 6 | 12 |
| | MAX | 40 | 36 | 22 | 26 | 33 |
| | # DATA | 22 | 12 | 13 | 14 | 8 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX T-12.....MER553 GUSTINE WASTE WATER TREATMENT PLANT DITCH AT SANTA FE GRADE

LOCATION Latitude 37 15'37", Longitude 120 57'11"
 In SE 1/4, SW 1/4, SW 1/4, Sec. 2, T.8S., R.9E.,
 0.8 miles S of Hwy 140 on W side of Santa Fe Grade,
 across from Lone Tree Gun Club, 2.2 miles E of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|-----|----|----|-----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 12/18/85 | 0935 | 2 | <5 | <1 | 8.1 | 12 | <5 | 5.2 | <0.2 |
| 01/09/86 | 0835 | <1 | <5 | 4 | 7 | 20 | <5 | | <0.5 |
| 02/01/86 | 1405 | <1 | 6 | 4 | 19 | 9 | <5 | | <0.5 |
| 02/07/86 | 1205 | 1 | 5 | 6 | 33 | 11 | <5 | | <0.5 |
| 02/16/86 | 1455 | 1 | 12 | 10 | 16 | 7 | <5 | | <0.5 |
| 03/02/86 | 1555 | 1 | 14 | 3 | 14 | 8 | <5 | | <0.5 |
| 04/26/86 | 1330 | <1 | | 1 | 38 | 8 | <5 | 6 | <0.2 |
| 06/03/86 | 1345 | 1.3 | | | | | | | |
| 06/26/86 | 1215 | 1.8 | <5 | 3 | 18 | <5 | <5 | 11 | <0.5 |
| 08/04/86 | 1410 | 2.0 | <5 | 3 | 1 | 15 | <5 | 6 | <0.5 |
| 09/02/86 | 1030 | 0.8 | 1 | 1 | 13 | 2 | <5 | 9 | <0.5 |
| 09/27/86 | 1335 | 1.0 | <1 | 16 | 13 | 22 | <5 | 26 | <0.5 |
| 11/03/86 | 1520 | 1.8 | <5 | 6 | 9 | 10 | <5 | <1 | |
| 12/04/86 | | 1.0 | <5 | <1 | <1 | 6 | <5 | <1 | <0.5 |
| 01/02/87 | 1345 | 1.4 | <5 | 3 | 34 | <5 | <5 | 19 | <0.5 |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 0.8 | <1 | <1 | 1 | 2 | | 5.2 | |
| | MED | 1 | <5 | 3 | 14 | 9 | | 8 | |
| | MAX | 2 | 14 | 16 | 38 | 22 | | 26 | |
| | # DATA | 12 | 10 | 14 | 11 | 11 | | 6 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1 | <5 | <1 | <1 | <5 | | <1 | |
| | MED | 1.4 | <5 | 3 | 9 | 6 | | <1 | |
| | MAX | 1.8 | <5 | 6 | 34 | 10 | | 19 | |
| | # DATA | 3 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | 0.8 | <1 | <1 | <1 | 2 | | <1 | |
| | MED | 1 | <5 | 3 | 14 | 9 | | 6 | |
| | MAX | 2 | 14 | 16 | 38 | 22 | | 26 | |
| | # DATA | 15 | 13 | 14 | 14 | 14 | | 9 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

APPENDIX F

Trace Element Water Quality Data for Outflow Monitoring Stations Listed in Order by Map Index Number

| Map Index | RWCB Site I.D. | Site Name | Page |
|-----------|----------------|---------------------------------------|------|
| O-1 | MER 551 | Mud Slough (N) @ Newman Gun Club | F-2 |
| O-2 | MER541 | Mud Slough (N) @ Hwy 140 | F-4 |
| O-3 | MER554 | Los Banos Creek @ Hwy 140 | F-6 |
| O-4 | MER531 | Salt Slough @ Lander Avenue | F-7 |
| O-5 | MER530 | Salt Slough @ Wolfsen Road | F-9 |
| O-6 | MER543 | City Ditch | F-11 |
| O-7 | MER548 | Santa Fe Canal - Mud Slough Diversion | F-13 |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-1.....MER551 MUD SLOUGH AT NEWMAN LAND AND CATTLE COMPANY

LOCATIONLatitude 37 18'33", Longitude 120 57'18"
 In NW 1/4, NW 1/4, SW 1/4, Sec. 23, T.7S., R.9E.,
 1.7 miles NE of Santa Fe Grade, 1.2 miles N of Hwy 140,
 4.2 miles NE of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 02/01/86 | 1315 | 11 | 10 | 6 | 4 | 14 | <5 | | <0.5 |
| 03/02/86 | 1330 | 4.0 | | | | | | | |
| 04/02/86 | | 3.0 | | | | | | | |
| 04/26/86 | 1145 | <1 | | 4 | 10 | 1 | <5 | 15 | <0.2 |
| 06/03/86 | 1120 | 10 | | | | | | | |
| 06/26/86 | 1020 | 22 | 5 | 4 | 17 | 6 | <5 | 10 | <0.5 |
| 08/04/86 | 1145 | 16 | 5 | 4 | 2 | 10 | <5 | 16 | <0.5 |
| 09/02/86 | 1240 | 2.7 | <5 | 5 | 8 | 11 | <5 | 15 | <0.5 |
| 09/27/86 | 1120 | 2.3 | <5 | 6 | 13 | 21 | <5 | 16 | <0.5 |
| 11/03/86 | 1545 | 1.7 | 14 | 4 | 7 | 10 | <5 | 1 | |
| 12/04/86 | | 1.9 | <5 | <1 | <1 | 8 | <5 | <1 | <0.5 |
| 01/02/87 | 1140 | 2.2 | 13 | 5 | 8 | 13 | <5 | 10 | <0.5 |
| 01/30/87 | 0955 | 5.1 | | | | | | | |
| 02/27/87 | 0955 | 26 | | | | | | | |
| 04/01/87 | 1000 | 12 | | | | | | | |
| 05/01/87 | 1110 | 4.5 | | | | | | | |
| 06/01/87 | 1200 | 11 | | | | | | | |
| 07/01/87 | 1245 | 5.0 | | | | | | | |
| 07/30/87 | 1430 | 15 | | | | | | | |
| 09/01/87 | 1340 | 8.1 | | | | | | | |
| 10/01/87 | 1330 | 3.2 | | | | | | | |
| 11/03/87 | 1115 | 1.4 | | | | | | | |
| 12/01/87 | 1210 | 1.6 | | | | | | | |
| 01/05/88 | 1145 | 4.1 | | | | | | | |
| 01/28/88 | 1445 | 1.4 | | | | | | | |
| 03/09/88 | 1120 | 18 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | <5 | 4 | 2 | 1 | | 10 | |
| | MED | 4 | 5 | 5 | 9 | 11 | | 15 | |
| | MAX | 22 | 10 | 6 | 17 | 21 | | 16 | |
| | # DATA | 9 | 5 | 6 | 6 | 6 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1.7 | <5 | <1 | <1 | 8 | | <1 | |
| | MED | 5.1 | 13 | 4 | 7 | 10 | | 1 | |
| | MAX | 26 | 14 | 5 | 8 | 13 | | 10 | |
| | # DATA | 11 | 3 | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 1.4 | | | | | | | |
| | MED | 2.4 | | | | | | | |
| | MAX | 18 | | | | | | | |
| | # DATA | 6 | | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-1.....MER551 MUD SLOUGH AT NEWMAN LAND AND CATTLE COMPANY (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|-------------------|--------|----|----|----|----|----|----|
|ug/L..... | | | | | | | |
| Total Recoverable | | | | | | | |
| TOTAL | MIN | <1 | <5 | <1 | <1 | 1 | <1 |
| | MED | 43 | 5 | 4 | 8 | 10 | 13 |
| | MAX | 26 | 14 | 6 | 17 | 21 | 16 |
| | # DATA | 26 | 8 | 9 | 9 | 9 | 8 |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-2.....MER541 MUD SLOUGH (NORTH) AT HWY 140

LOCATIONLatitude 37 17'28", Longitude 120 56'34"
 NW 1/4, SE 1/4, SE 1/4, Sec. 26, T.7S., R.9E.,
 1.7 miles NE of the Santa Fe-Hwy 140 intersection.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|-----|----|-----|----|----|-----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1455 | 13 | | | | | | | |
| 06/03/85 | 1355 | 17 | | | | | | | |
| 07/02/85 | 1135 | 23 | | | | | | | |
| 08/14/85 | 1840 | 13 | | | | | | | |
| 08/29/85 | 0940 | 12 | | | | | | | |
| 09/28/85 | 1345 | 3.0 | | | | | | | |
| 10/30/85 | 1650 | 2.0 | | | | | | | |
| 12/07/85 | 1555 | 2.0 | 11 | 6 | 4 | 16 | <5 | | <0.5 |
| 12/18/85 | 0855 | 1.0 | 10 | 7 | 6 | 26 | <5 | 6 | <0.2 |
| 01/04/86 | 1405 | 9.0 | 18 | 16 | 9 | 17 | <5 | | <0.2 |
| 01/09/86 | 1015 | 5.0 | 13 | 12 | 4 | 40 | <5 | | <0.5 |
| 01/14/86 | 1350 | 9.0 | <5 | 8 | 1 | 11 | <5 | | <0.5 |
| 02/07/86 | 1130 | 2.0 | 18 | 8 | 9 | 20 | <5 | | <0.5 |
| 02/16/86 | 1510 | 12 | 8 | 5 | 5 | 18 | <5 | | <0.5 |
| 03/01/86 | 1615 | 5.0 | 7 | 8 | 2 | 7 | <5 | | <0.5 |
| 04/03/86 | | 4.7 | 4 | <10 | 6 | <5 | <10 | 20 | |
| 04/26/86 | 1410 | 8.0 | | 3 | 4 | 8 | <5 | 5 | <0.2 |
| 05/13/86 | 1230 | 26 | 8 | 3 | 5 | 15 | <5 | | <0.5 |
| 06/03/86 | 1405 | 25 | 11 | 1 | <1 | 13 | <5 | | <0.5 |
| 06/16/86 | 1540 | 22 | 8 | 4 | 18 | 10 | <5 | 8 | <0.5 |
| 06/26/86 | 1230 | 23 | 7 | 4 | 13 | 9 | <5 | 10 | <0.5 |
| 08/04/86 | 1425 | 19 | 7 | 4 | 2 | 14 | <5 | 12 | <0.5 |
| 09/02/86 | 1050 | 11 | 9 | 3 | 3 | 7 | <5 | 13 | <0.5 |
| 09/27/86 | 1355 | 5.6 | 6 | 9 | 15 | 23 | <5 | 31 | 0.5 |
| 11/03/86 | 1500 | 2.0 | 7 | 11 | 12 | 8 | <5 | 2 | |
| 12/04/86 | | 1.7 | 22 | 9 | 13 | 12 | <5 | 13 | <0.5 |
| 01/02/87 | 1410 | 3.8 | 18 | 4 | 8 | 11 | <5 | 7 | <0.5 |
| 01/30/87 | 1035 | 5.3 | 16 | | | | | | |
| 02/27/87 | 1030 | 32 | | | | | | | |
| 04/01/87 | 1035 | 16 | | | | | | | |
| 05/01/87 | 1145 | 6.3 | | | | | | | |
| 06/01/87 | 1240 | 19 | 11 | | | | | | |
| 06/15/87 | 1225 | 27 | 12 | | | | | | |
| 07/01/87 | 1210 | 5.7 | 6 | | | | | | |
| 07/15/87 | 1145 | 22 | 8 | | | | | | |
| 07/31/87 | 1305 | 22 | 7 | | | | | | |
| 08/17/87 | 1350 | 29 | 7 | | | | | | |
| 09/01/87 | 1315 | 25 | 7 | | | | | | |
| 09/18/87 | 1050 | 17 | 9 | | | | | | |
| 10/01/87 | 1300 | 3.8 | 18 | | | | | | |
| 10/15/87 | 0945 | 2.2 | 14 | | | | | | |
| 11/03/87 | 1150 | 1.7 | 8 | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-2.....MER541 MUD SLOUGH (NORTH) AT HWY 140 (cont.)

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|-----|----|----|----|----|----|----|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 11/17/87 | 1120 | 1.5 | 9 | | | | | | |
| 12/01/87 | 1240 | 1.4 | 14 | | | | | | |
| 12/14/87 | 1100 | 1.2 | 12 | | | | | | |
| 01/05/88 | 1220 | 4.3 | 15 | | | | | | |
| 01/15/88 | 1135 | 4.3 | | | | | | | |
| 02/16/88 | 1120 | 8.4 | | | | | | | |
| 03/02/88 | 1100 | 2.2 | | | | | | | |
| 03/09/88 | 1200 | 17 | | | | | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 3 | | | | | | | |
| | MED | 13 | | | | | | | |
| | MAX | 23 | | | | | | | |
| | # DATA | 6 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 1 | <5 | 1 | <1 | <5 | | 5 | |
| | MED | 8.5 | 8 | 6 | 5 | 14 | | 11 | |
| | MAX | 26 | 18 | 16 | 18 | 40 | | 31 | |
| | # DATA | 18 | 16 | 17 | 17 | 17 | | 8 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 1.7 | 6 | 4 | 8 | 8 | | 2 | |
| | MED | 17 | 8.5 | 9 | 12 | 11 | | 7 | |
| | MAX | 32 | 22 | 11 | 13 | 12 | | 15 | |
| | # DATA | 15 | 12 | 3 | 3 | 5 | | 3 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 1.2 | 8 | | | | | | |
| | MED | 2.2 | 14 | | | | | | |
| | MAX | 17 | 18 | | | | | | |
| | # DATA | 11 | 7 | | | | | | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | 1 | <5 | 1 | <1 | <5 | | 2 | |
| | MED | 8 | 9 | 7 | 6 | 13 | | 10 | |
| | MAX | 32 | 22 | 16 | 18 | 40 | | 31 | |
| | # DATA | 50 | 35 | 20 | 20 | 20 | | 11 | |

* Water year: extending from 1 October of one year to 1 October
of the following year

F

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-3.....MER554 LOS BANOS CREEK AT HIGHWAY 140

LOCATIONLatitude 37 16'35", Longitude 120 57'14"
 In NE 1/4, SW 1/4, SW 1/4, Sec. 35, T.7S., R.9E.,
 S side of Hwy 140, 2.7 miles NE of Gustine.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|-----|----|----|-----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 12/18/85 | 0915 | 1 | 5 | 4 | 3 | 13 | <5 | 5 | <0.2 |
| 01/09/86 | 1035 | 1 | 15 | | 6 | 30 | <5 | | <0.5 |
| 01/14/86 | 1340 | 1 | <5 | 8 | 6 | 14 | <5 | | <0.5 |
| 02/07/86 | 1140 | 1 | 13 | 6 | 8 | 28 | <5 | | <0.5 |
| 04/03/86 | | 1 | 4 | <10 | 13 | 16 | <10 | 29 | |
| 04/19/86 | 1030 | <1 | <5 | 10 | 5 | 19 | <5 | | <0.5 |
| 01/30/87 | 1020 | 0.9 | | | | | | | |
| 02/27/87 | 1020 | 1.4 | | | | | | | |
| 04/01/87 | 1025 | 1.1 | | | | | | | |
| 05/01/87 | 1140 | 3.7 | | | | | | | |
| 06/01/87 | 1230 | 1.4 | | | | | | | |
| 07/01/87 | 1220 | 2.3 | | | | | | | |
| 07/31/87 | 1315 | 1.4 | | | | | | | |
| 09/01/87 | 1325 | 1.5 | | | | | | | |
| 10/01/87 | 1315 | 0.6 | | | | | | | |
| 11/03/87 | 1135 | 0.9 | | | | | | | |
| 12/01/87 | 1230 | 1.0 | | | | | | | |
| 01/05/88 | 1210 | 0.4 | | | | | | | |
| 01/28/88 | 1300 | 1.0 | | | | | | | |
| 03/09/88 | 1140 | 0.5 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | 4 | 4 | 3 | 13 | | 5 | |
| | MED | 1 | <5 | 8 | 6 | 18 | | 17 | |
| | MAX | 1 | 15 | 10 | 13 | 30 | | 29 | |
| | # DATA | 6 | 6 | 5 | 6 | 6 | | 2 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 0.9 | | | | | | | |
| | MED | 1.4 | | | | | | | |
| | MAX | 3.7 | | | | | | | |
| | # DATA | 8 | | | | | | | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 0.4 | | | | | | | |
| | MED | 0.8 | | | | | | | |
| | MAX | 1 | | | | | | | |
| | # DATA | 6 | | | | | | | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | 0.4 | 4 | 4 | 3 | 13 | | 5 | |
| | MED | 1 | <5 | 8 | 6 | 18 | | 17 | |
| | MAX | 3.7 | 15 | 10 | 13 | 30 | | 29 | |
| | # DATA | 20 | 6 | 5 | 6 | 6 | | 2 | |

* Water year: extending from 1 October of one year to 1 October
 of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-4.....MER531 SALT SLOUGH AT LANDER AVE. (HWY 165)

LOCATIONLatitude 37 14' 55", Longitude 120 51' 04"
 NW 1/4, SE 1/4, SE 1/4, Sec. 10, T.8S., R.10E.,
 Lander Ave 13.0 miles N of Los Banos and 5.0 miles S of HWY 140.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1425 | 8.0 | | | | | | | |
| 06/03/85 | 1315 | 5.0 | | | | | | | |
| 07/02/85 | 1055 | 6.0 | | | | | | | |
| 08/15/85 | 1140 | 4.0 | | | | | | | |
| 08/29/85 | 0900 | 3.0 | | | | | | | |
| 09/28/85 | 1305 | 1.0 | | | | | | | |
| 10/31/85 | 1235 | 4.0 | | | | | | | |
| 12/07/85 | 1515 | 8.0 | 14 | 6 | 4 | 13 | <5 | | |
| 12/18/85 | 0750 | 2.0 | 8 | 1 | 1 | 12 | <5 | 6 | <0.2 |
| 01/04/86 | 1315 | 15 | 10 | 12 | 4 | 11 | <5 | | <0.2 |
| 01/09/86 | 0925 | 14 | 14 | 11 | 4 | 26 | <5 | | <0.5 |
| 01/14/86 | 1450 | 12 | 11 | <1 | 1 | 10 | <5 | | <0.5 |
| 02/07/86 | 1040 | 22 | 13 | 6 | 12 | 23 | <5 | | <0.5 |
| 02/17/86 | 0840 | 20 | 7 | 8 | 33 | 26 | <5 | | <0.5 |
| 03/01/86 | 1710 | 14 | 10 | 10 | 5 | 10 | <5 | | <0.5 |
| 04/02/86 | | 13 | | | | | | | |
| 04/26/86 | 1455 | 6.0 | | 4 | 4 | 9 | <5 | 7 | <0.2 |
| 05/13/86 | 1130 | <1 | <5 | 5 | 3 | 6 | <5 | | <0.5 |
| 06/03/86 | 1455 | 1.4 | 7 | 8 | 6 | 14 | <5 | | <0.5 |
| 06/16/86 | 1630 | 1.6 | 7 | 6 | 22 | 17 | <5 | 18 | <0.5 |
| 06/26/86 | 1310 | 1.5 | 5 | 6 | 16 | 12 | <5 | 24 | <0.5 |
| 08/04/86 | 1515 | 4.8 | 5 | 5 | 2 | 10 | <5 | 20 | <0.5 |
| 09/02/86 | 1130 | 8.3 | 5 | 4 | 2 | 6 | <5 | 17 | <0.5 |
| 09/27/86 | 1445 | 6.7 | 5 | 6 | 8 | 10 | <5 | 18 | <0.5 |
| 11/03/86 | 1445 | 10 | 5 | 4 | 6 | 7 | <5 | 3 | |
| 12/04/86 | | 18 | 6 | 5 | 6 | 6 | <5 | | <0.5 |
| 01/02/87 | 1455 | 16 | 10 | 2 | 4 | 5 | <5 | 4 | <0.5 |
| 01/30/87 | 1110 | 24 | 9 | | | | | | |
| 02/27/87 | 1110 | 26 | | | | | | | |
| 04/01/87 | 1110 | 14 | | | | | | | |
| 05/01/87 | 1230 | 8.6 | | | | | | | |
| 06/01/87 | 1310 | 9.7 | 7 | | | | | | |
| 06/15/87 | 1300 | 12 | 6 | | | | | | |
| 07/01/87 | 1125 | 12 | 5 | | | | | | |
| 07/15/87 | 1235 | 8.6 | | | | | | | |
| 07/31/87 | 1230 | 9.3 | | | | | | | |
| 08/17/87 | 1440 | 5.7 | | | | | | | |
| 09/01/87 | 1225 | 5.2 | | | | | | | |
| 09/18/87 | 1130 | 12 | | | | | | | |
| 10/01/87 | 1220 | 13 | | | | | | | |
| 10/15/87 | 1025 | 1.6 | 4 | | | | | | |
| 11/03/87 | 1225 | 6.0 | | | | | | | |
| 11/17/87 | 1230 | 2.4 | | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX O-4.....MER531 SALT SLOUGH AT LANDER AVE. (HWY 165) (cont.)

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|-----|----|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 12/01/87 | 1330 | 12 | 10 | | | | | | |
| 12/14/87 | 1145 | 14 | 13 | | | | | | |
| 01/05/88 | 1300 | 27 | 12 | | | | | | |
| 01/15/88 | 1045 | 26 | | | | | | | |
| 01/27/88 | 1735 | 4.9 | 11 | | | | | | |
| 01/28/88 | 1330 | 32 | 10 | | | | | | |
| 03/02/88 | 1150 | 16 | | | | | | | |
| 03/09/88 | 1240 | 18 | | | | | | | |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 1 | | | | | | | |
| | MED | 4.5 | | | | | | | |
| | MAX | 8 | | | | | | | |
| | # DATA | 6 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | <1 | 5 | <1 | 1 | 6 | | 6 | |
| | MED | 7.4 | 7 | 6 | 4 | 12 | | 18 | |
| | MAX | 22 | 14 | 12 | 33 | 26 | | 24 | |
| | # DATA | 18 | 15 | 16 | 16 | 16 | | 7 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 5.2 | <5 | 2 | 4 | 5 | | 3 | |
| | MED | 12 | 6 | 4 | 6 | 6 | | 3.5 | |
| | MAX | 26 | 10 | 5 | 6 | 7 | | 4 | |
| | # DATA | 15 | 7 | 3 | 3 | 3 | | 2 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 1.6 | 4 | | | | | | |
| | MED | 14 | 11 | | | | | | |
| | MAX | 32 | 13 | | | | | | |
| | # DATA | 12 | 6 | | | | | | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | <1 | 4 | <1 | 1 | 5 | | 3 | |
| | MED | 9.5 | 7 | 6 | 4 | 10 | | 18 | |
| | MAX | 32 | 14 | 16 | 33 | 26 | | 24 | |
| | # DATA | 51 | 28 | 19 | 19 | 19 | | 9 | |

* Water year: extending from 1 October of one year to 1 October
of the following year

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-5.....MER530 SALT SLOUGH AT WOLFSN ROAD (SAN LUIS RANCH)

LOCATIONLatitude 37° 09' 33", Longitude 120° 48' 40"
 SE 1/4, SW 1/4, SW 1/4, Sec. 7, T.9S., R.11E.,
 0.9 miles from first bridge on Wolfsen Road.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|------|-----|----|-----|----|----|-----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1410 | 7 | | | | | | | |
| 06/03/85 | 1220 | 4 | | | | | | | |
| 06/14/85 | 1020 | 6 | | | | | | | |
| 07/02/85 | 1035 | 6 | | | | | | | |
| 08/15/85 | 1120 | 6 | | | | | | | |
| 08/29/85 | 0840 | 4 | | | | | | | |
| 09/28/85 | 1250 | <1 | | | | | | | |
| 10/31/85 | 1215 | 4 | | | | | | | |
| 12/07/85 | 1455 | 12 | 9 | 8 | 6 | 15 | <5 | | <0.5 |
| 01/04/86 | 1300 | 22 | 25 | 9 | 5 | 13 | <5 | | <0.2 |
| 01/14/86 | 1510 | 13 | | | | | | | |
| 02/07/86 | 1020 | 26 | 15 | 12 | 20 | 37 | <5 | | <0.5 |
| 03/01/86 | 1730 | 16 | 11 | 11 | 7 | 11 | 12 | | <0.5 |
| 04/02/86 | | 12 | | | | | | | |
| 04/03/86 | | | | <10 | 10 | 9 | <10 | 23 | |
| 04/19/86 | 0930 | 8 | <5 | | 3 | 9 | <5 | | <0.5 |
| 04/26/86 | 1515 | 7 | | 4 | 5 | 10 | <5 | 8 | <0.2 |
| 05/13/86 | 1110 | <1 | | | | | | | |
| 06/03/86 | 1515 | 1.3 | 6 | | | | | | |
| 06/26/86 | 1330 | 2.3 | 8 | 6 | 19 | 11 | <5 | 23 | <0.5 |
| 08/04/86 | 1540 | 5.3 | <5 | 12 | 1 | 11 | <5 | 19 | <0.5 |
| 09/02/86 | 1145 | 7.7 | <5 | 5 | 3 | 7 | <5 | 20 | <0.5 |
| 09/27/86 | 1505 | | <5 | 5 | 10 | 10 | <5 | 14 | <0.5 |
| 11/03/86 | 1430 | 10 | 5 | 5 | 6 | 7 | <5 | 4 | |
| 12/04/86 | | 24 | <5 | 12 | <1 | <5 | <5 | 22 | <0.5 |
| 01/02/87 | 1515 | 18 | 9 | 3 | 6 | 6 | <5 | 6 | <0.5 |
| 01/30/87 | 1125 | 23 | | | | | | | |
| 02/27/87 | 1125 | 31 | | | | | | | |
| 04/01/87 | 1125 | 17 | | | | | | | |
| 05/01/87 | 1245 | 15 | | | | | | | |
| 06/01/87 | 1330 | 10 | 6 | | | | | | |
| 07/01/87 | 1105 | 12 | 5 | | | | | | |
| 07/31/87 | 1210 | 10 | | | | | | | |
| 09/01/87 | 1205 | 4.6 | | | | | | | |
| 10/01/87 | 1200 | 11 | | | | | | | |
| 11/03/87 | 1245 | 4.4 | | | | | | | |
| 12/01/87 | 1345 | 14 | | | | | | | |
| 01/05/88 | 1305 | 27 | | | | | | | |
| 01/27/88 | 1720 | 34 | | | | | | | |
| 03/09/88 | 1255 | 20 | | | | | | | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-5.....MER530 SALT SLOUGH AT WOLFSEN ROAD (SAN LUIS RANCH) (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|-----|----|----|----|
| | | ug/L..... | | | | | |
| | | Total Recoverable | | | | | |
| 85 WY* | MIN | <1 | | | | | |
| | MED | 6 | | | | | |
| | MAX | 7 | | | | | |
| | # DATA | 7 | | | | | |
| 86 WY* | MIN | <1 | <5 | 4 | 1 | 7 | 8 |
| | MED | 7.9 | 7 | 8.5 | 6 | 11 | 20 |
| | MAX | 26 | 25 | 12 | 20 | 37 | 23 |
| | # DATA | 14 | 10 | 10 | 11 | 11 | 6 |
| 87 WY* | MIN | 4.6 | <5 | 3 | <1 | <5 | 4 |
| | MED | 15 | 5 | 5 | 6 | 6 | 6 |
| | MAX | 31 | 9 | 12 | 6 | 7 | 22 |
| | # DATA | 11 | 5 | 3 | 3 | 3 | 3 |
| 88 WY* | MIN | 4.4 | | | | | |
| | MED | 17 | | | | | |
| | MAX | 34 | | | | | |
| | # DATA | 6 | | | | | |
| TOTAL | MIN | <1 | <5 | 3 | <1 | <5 | 4 |
| | MED | 10 | 6 | 8 | 6 | 10 | 19 |
| | MAX | 34 | 25 | 12 | 20 | 37 | 23 |
| | # DATA | 38 | 15 | 13 | 14 | 14 | 9 |

* Water Year: extending from 1 October of one year to 1 October
of the following year.

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX O-6.....MER543 CITY DITCH (SAN LUIS WASTEWAY TO MUD SLOUGH)

LOCATIONLatitude 37° 07' 44", Longitude 120° 48' 53"; In
 SW 1/4, SW 1/4, SW 1/4, Sec. 19, T.9S., R.11E.,
 2.2 miles N of Los Banos Wildlife Refuge Office.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|----|----|----|----|----|-----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 05/02/85 | 1330 | 30 | | | | | | | |
| 06/03/85 | 1200 | 16 | | | | | | | |
| 07/02/85 | 0940 | 24 | | | | | | | |
| 08/15/85 | 1020 | 16 | | | | | | | |
| 08/29/85 | 0740 | 18 | | | | | | | |
| 10/31/85 | 1110 | 12 | | | | | | | |
| 12/07/85 | 1325 | 27 | 17 | 6 | 7 | 16 | <5 | | <0.5 |
| 01/04/86 | 1145 | 42 | 21 | 19 | 8 | 34 | <5 | | <0.2 |
| 01/14/86 | 1420 | 23 | 11 | 3 | 14 | 33 | <5 | | <0.5 |
| 02/17/86 | 0745 | 32 | 8 | 26 | 17 | 52 | <5 | | <0.5 |
| 03/02/86 | 1155 | 34 | 8 | 10 | 18 | 30 | <5 | | <0.5 |
| 04/02/86 | | 27 | | | | | | | |
| 04/03/86 | | 31 | 5 | 15 | 27 | 22 | <10 | 36 | |
| 04/19/86 | 0850 | 32 | 6 | 6 | 12 | 15 | <5 | | <0.5 |
| 04/26/86 | 1615 | 33 | | 11 | 23 | 35 | <5 | 16 | <0.2 |
| 05/13/86 | 1030 | 27 | 6 | 4 | 5 | 8 | <5 | | <0.5 |
| 08/05/86 | 1130 | 25 | <5 | 8 | 6 | 15 | <5 | 29 | <0.5 |
| 09/02/86 | 1250 | 22 | <5 | 9 | 12 | 22 | <5 | 41 | <0.5 |
| 09/27/86 | 1615 | | <5 | 7 | 12 | 11 | <5 | 17 | <0.5 |
| 12/04/86 | 1410 | 41 | <5 | <1 | 15 | 11 | <5 | 21 | <0.5 |
| 01/02/87 | 1635 | 35 | 9 | 4 | 9 | 7 | <5 | 6 | <0.5 |
| 02/27/87 | 1215 | 50 | 14 | 4 | 19 | 11 | <5 | | 15 |
| 04/01/87 | 1215 | 47 | 13 | 4 | 12 | 9 | <5 | | 16 |
| 09/01/87 | 1055 | 29 | | 12 | 29 | 22 | 6 | | 34 |
| 01/05/88 | 1210 | 40 | | 7 | 23 | 12 | <5 | | 22 |
| 03/09/88 | 1345 | 43 | | 19 | 56 | 35 | 6 | | 53 |
| <hr/> | | | | | | | | | |
| 85 WY* | MIN | 16 | | | | | | | |
| | MED | 18 | | | | | | | |
| | MAX | 30 | | | | | | | |
| | # DATA | 5 | | | | | | | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 12 | <5 | 3 | 5 | 8 | | 16 | |
| | MED | 27 | 6 | 9 | 12 | 27 | | 29 | |
| | MAX | 42 | 21 | 26 | 27 | 52 | | 41 | |
| | # DATA | 13 | 11 | 12 | 12 | 12 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 29 | <5 | <1 | 9 | 7 | | 6 | |
| | MED | 41 | 11 | 4 | 15 | 11 | | 16 | |
| | MAX | 50 | 14 | 12 | 29 | 22 | | 34 | |
| | # DATA | 5 | 4 | 5 | 5 | 5 | | 5 | |

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX O-6.....MER543 CITY DITCH (SAN LUIS WASTEWAY TO MUD SLOUGH) (cont.)

| DATE | | Se | Mo | Cu | Cr | Ni | Zn |
|--------|--------|-------------------|----|----|----|----|----|
| | | ug/L..... | | | | | |
| | | Total Recoverable | | | | | |
| 88 WY* | MIN | 40 | | 7 | 23 | 12 | 22 |
| | MED | 42 | | 13 | 40 | 24 | 38 |
| | MAX | 43 | | 19 | 56 | 35 | 53 |
| | # DATA | 2 | | 2 | 2 | 2 | 2 |
| TOTAL | MIN | 12 | <5 | <1 | 5 | 7 | 6 |
| | MED | 30 | 8 | 7 | 14 | 16 | 22 |
| | MAX | 50 | 21 | 26 | 56 | 52 | 53 |
| | # DATA | 25 | 15 | 19 | 19 | 19 | 12 |

* Water Year: extending from 1 October of one year to 1 October
of the following year.

TRACE ELEMENT WATER QUALITY DATA

MAP INDEX 0-7.....MER548 SANTA FE CANAL-MUD SLOUGH DIVERSION AT HENRY MILLER ROAD

LOCATIONLatitude 37 05' 59", Longitude 120 49'11"
 NW 1/4, NE 1/4, SE 1/4, Sec. 1, T.10S., R.10E.,
 On Henry Miller Rd. 0.8 miles E of Mercy Springs Rd.

| DATE | TIME | Se | Mo | Cu | Cr | Ni | Pb | Zn | Hg |
|-------------------|--------|-----|----|----|----|----|----|----|------|
|ug/L..... | | | | | | | | | |
| Total Recoverable | | | | | | | | | |
| 01/14/86 | 1445 | 25 | 11 | 4 | 8 | 5 | <5 | | <0.5 |
| 02/07/86 | 0905 | 35 | 12 | 13 | 23 | 32 | <5 | | <0.5 |
| 03/02/86 | 1135 | 37 | 12 | 4 | 7 | 12 | <5 | | <0.5 |
| 04/26/86 | 1640 | 32 | | 5 | 11 | 17 | <5 | 2 | <0.2 |
| 06/26/86 | 1415 | 25 | <5 | 5 | 25 | 12 | <5 | 12 | <0.5 |
| 08/05/86 | 1115 | 27 | 12 | 3 | <1 | 4 | <5 | 3 | <0.5 |
| 09/02/86 | 1235 | 24 | 8 | 2 | <1 | <5 | <5 | 3 | <0.5 |
| 09/27/86 | 1600 | | <5 | 6 | 10 | 9 | <5 | 14 | <0.5 |
| 11/03/86 | 1345 | 19 | 8 | 7 | 12 | 13 | <5 | 11 | |
| 01/02/87 | 1615 | 29 | 13 | 2 | 5 | <5 | <5 | 6 | <0.5 |
| 01/30/87 | 1145 | 32 | 15 | 2 | 1 | <5 | <5 | 12 | <0.5 |
| 05/01/87 | 1330 | 34 | 7 | 6 | 16 | 15 | <5 | 25 | |
| 06/01/87 | 1415 | 33 | | 5 | 13 | 9 | <5 | 13 | |
| 07/01/87 | 1000 | 23 | | 18 | 55 | 35 | 16 | 48 | |
| 07/31/87 | 1105 | 32 | | 8 | 14 | 10 | <5 | 19 | |
| 10/01/87 | 1110 | 44 | | 5 | 16 | 14 | <5 | 16 | |
| 11/03/87 | 1325 | 9.5 | | 3 | 5 | 6 | <5 | 8 | |
| 01/27/88 | 1620 | 49 | | 5 | 20 | 8 | <5 | 9 | |
| <hr/> | | | | | | | | | |
| 86 WY* | MIN | 24 | <5 | 2 | <1 | <5 | | 2 | |
| | MED | 27 | 11 | 5 | 5 | 11 | | 3 | |
| | MAX | 37 | 12 | 13 | 25 | 32 | | 14 | |
| | # DATA | 7 | 7 | 8 | 8 | 8 | | 5 | |
| <hr/> | | | | | | | | | |
| 87 WY* | MIN | 19 | 7 | 2 | 1 | <5 | | 6 | |
| | MED | 32 | 11 | 6 | 13 | 10 | | 13 | |
| | MAX | 34 | 15 | 18 | 55 | 35 | | 48 | |
| | # DATA | 7 | 4 | 7 | 7 | 7 | | 7 | |
| <hr/> | | | | | | | | | |
| 88 WY* | MIN | 9.5 | | 3 | 5 | 6 | | 8 | |
| | MED | 44 | | 5 | 16 | 8 | | 9 | |
| | MAX | 49 | | 5 | 20 | 14 | | 16 | |
| | # DATA | 3 | | 3 | 3 | 3 | | 3 | |
| <hr/> | | | | | | | | | |
| TOTAL | MIN | 9.5 | <5 | 2 | <1 | <5 | | 2 | |
| | MED | 32 | 6 | 5 | 12 | 10 | | 12 | |
| | MAX | 49 | 15 | 18 | 55 | 35 | | 48 | |
| | # DATA | 17 | 11 | 18 | 18 | 18 | | 15 | |

* Water Year: extending from 1 October of one year to 1 October of the following year.

REFERENCES

- James, E.W., Grewell, B.J., Westcot, D.W., Belden, K.K. and Boyd, T.F., 1988a. Water Quality of the Lower San Joaquin River: Lander Avenue to Vernalis, May 1985 to March 1988. Central Valley Regional Water Quality Control Board Report. 95 pages.
- James, E.W., Westcot, D.W., Grewell, B.J., Belden, K.K., Boyd, T.F., Waters, R.I., and Thomasson, R.R., 1988b. Agricultural Drainage Contribution to Water Quality in the Grassland Area of Western Merced County, California. Central Valley Regional Water Quality Control Board Report, 169 pages.
- U.S. Army Corps of Engineers, 1984 San Joaquin River Aerial Atlas 2 volumes (Stockton to Merced River) (Merced River to Mendota)

Figure 2

Grassland Area of Western Merced County

MONITORING SITES

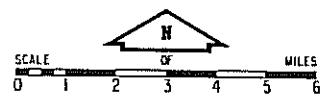
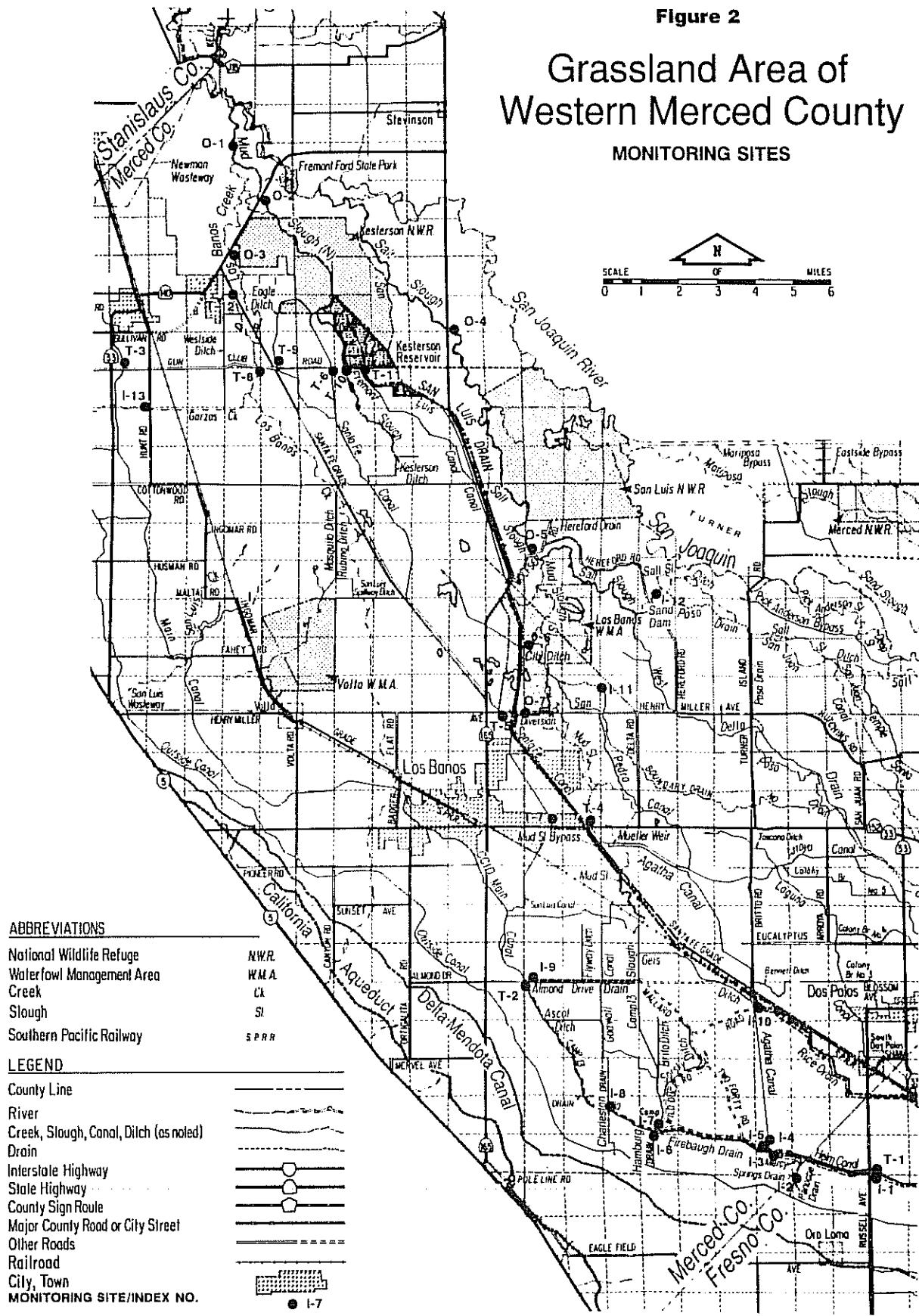


Figure 2

Grassland Area of Western Merced County

MONITORING SITES



ABBREVIATIONS

National Wildlife Refuge
Waterfowl Management Area
Creek
Slough
Southern Pacific Railway

N.W.R.
W.M.A.
Ck
Sl.
S.P.R.R.

LEGEND

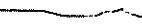
County Line
River
Creek, Slough, Canal, Ditch (as noted)



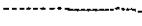
Drain



Interstate Highway



State Highway



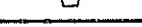
County Sign Route



Major County Road or City Street



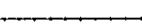
Other Roads



Railroad



City, Town



MONITORING SITE/INDEX NO.

● I-7

Figure 2

Grassland Area of Western Merced County

MONITORING SITES

SCALE
0 1 2 3 4 5 6 MILES

ABBREVIATIONS

National Wildlife Refuge

Waterfowl Management Area

Creek

Slough

Southern Pacific Railway

NWR

WMA

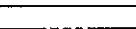
CA

SI

SPRR

LEGEND

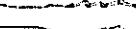
County Line



River



Creek, Slough, Canal, Ditch (as noted)



Drain



Interstate Highway



State Highway



County Sign Route



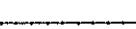
Major County Road or City Street



Other Roads



Railroad



City, Town



MONITORING SITE/INDEX NO.

● I-7

Figure 2

Grassland Area of Western Merced County

MONITORING SITES



Figure 2

Grassland Area of Western Merced County

MONITORING SITES

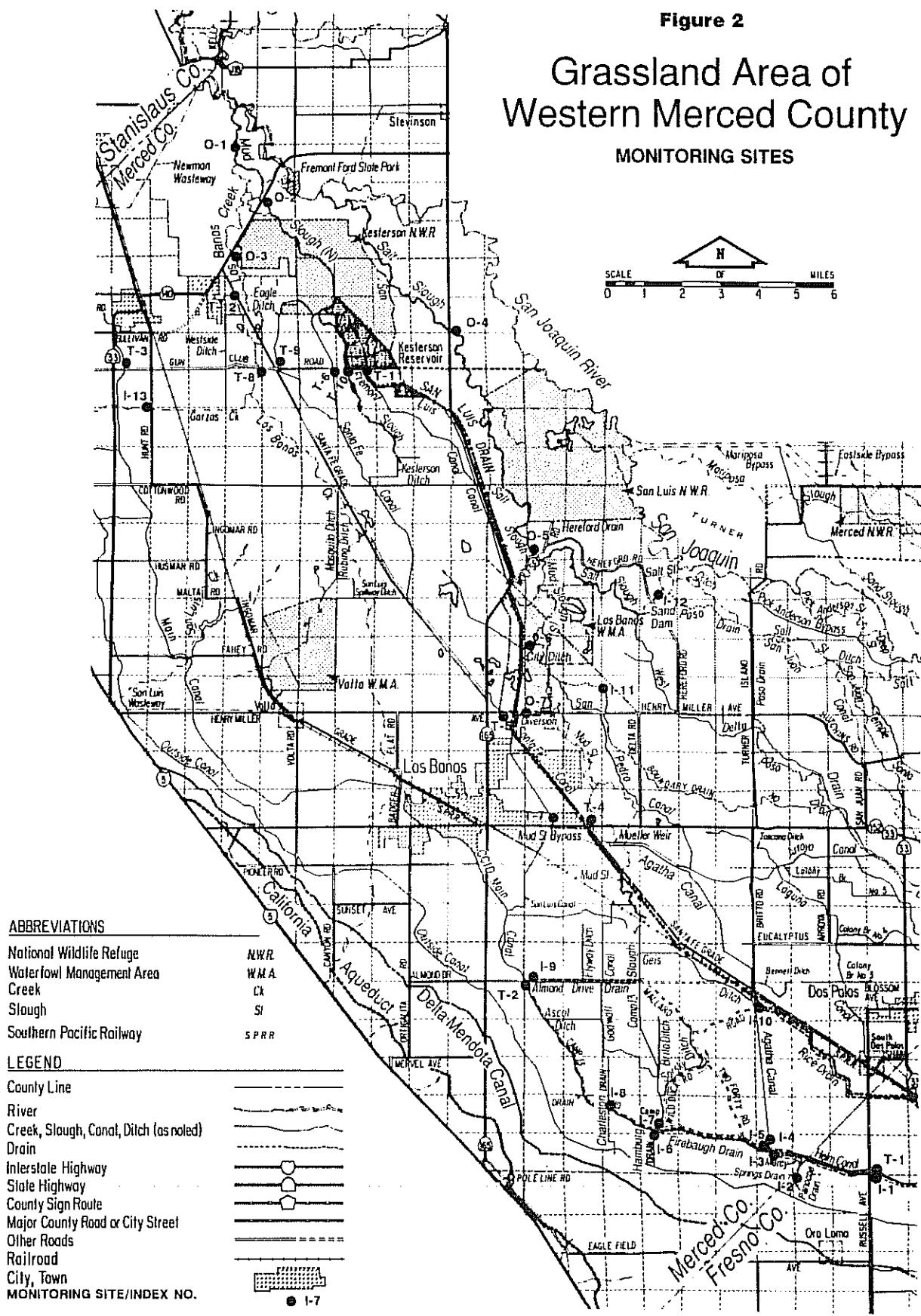


Figure 2

Grassland Area of Western Merced County

MONITORING SITES



Figure 2

Grassland Area of Western Merced County

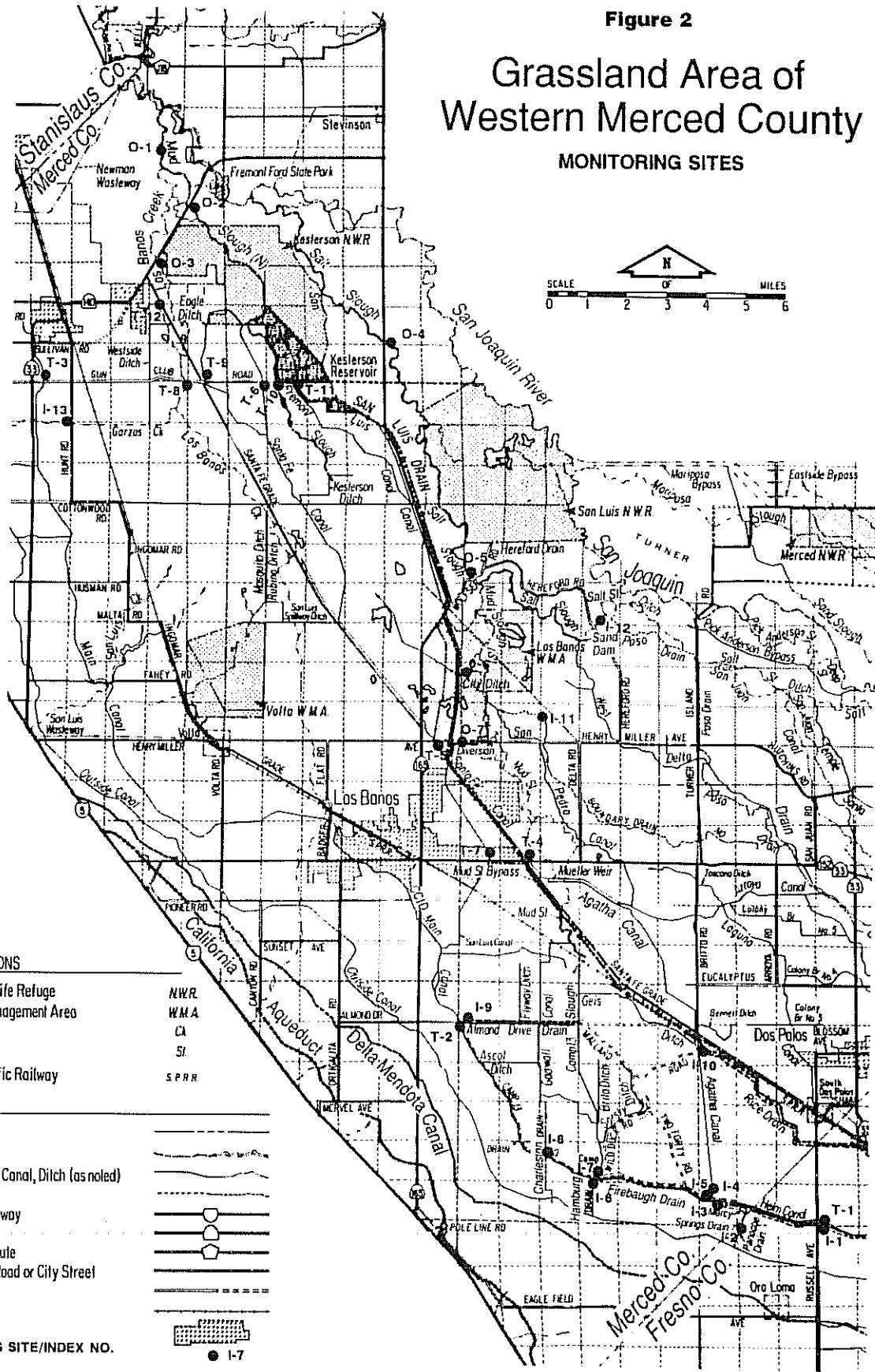


Figure 2

Grassland Area of Western Merced County MONITORING SITES

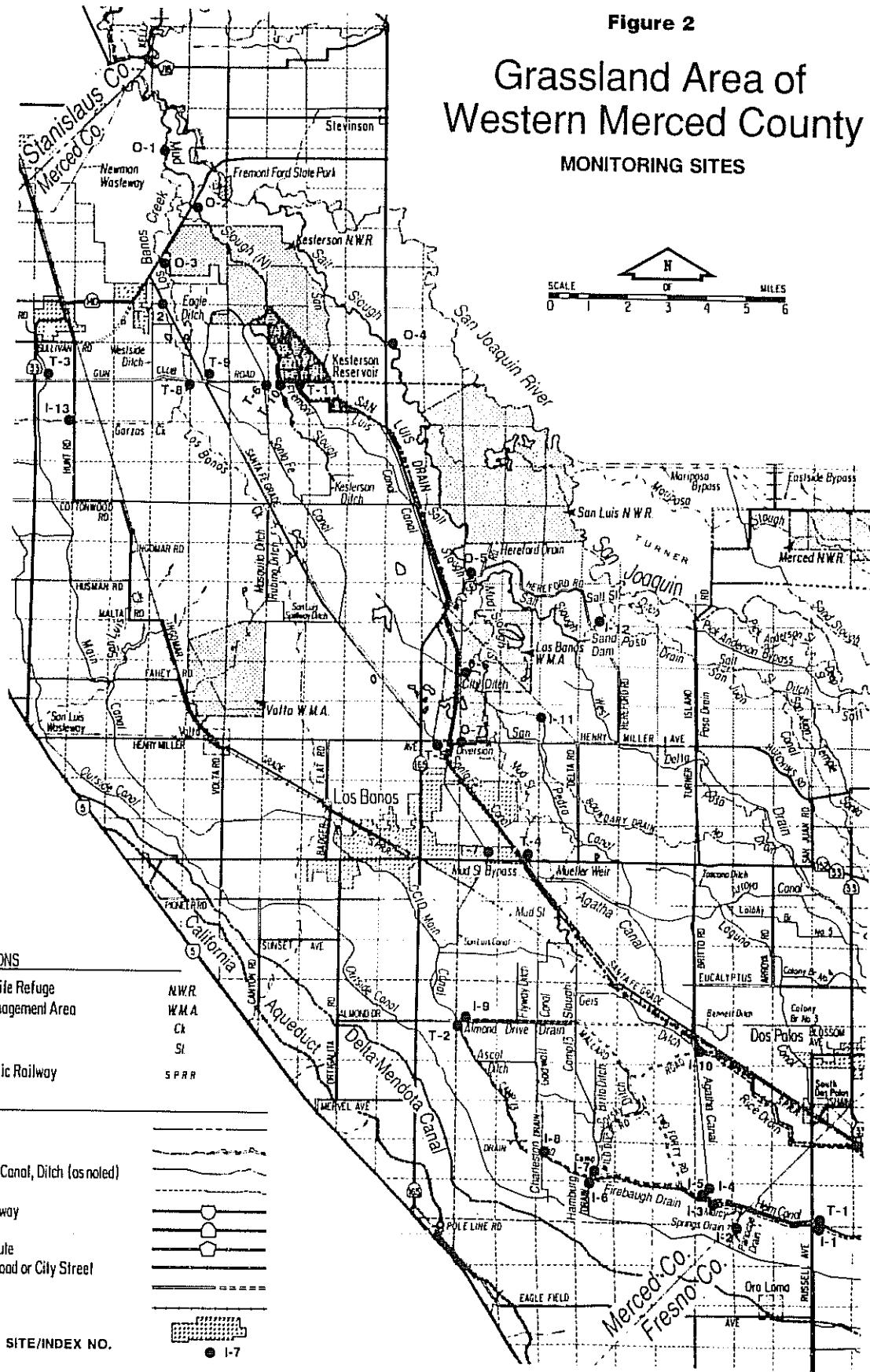
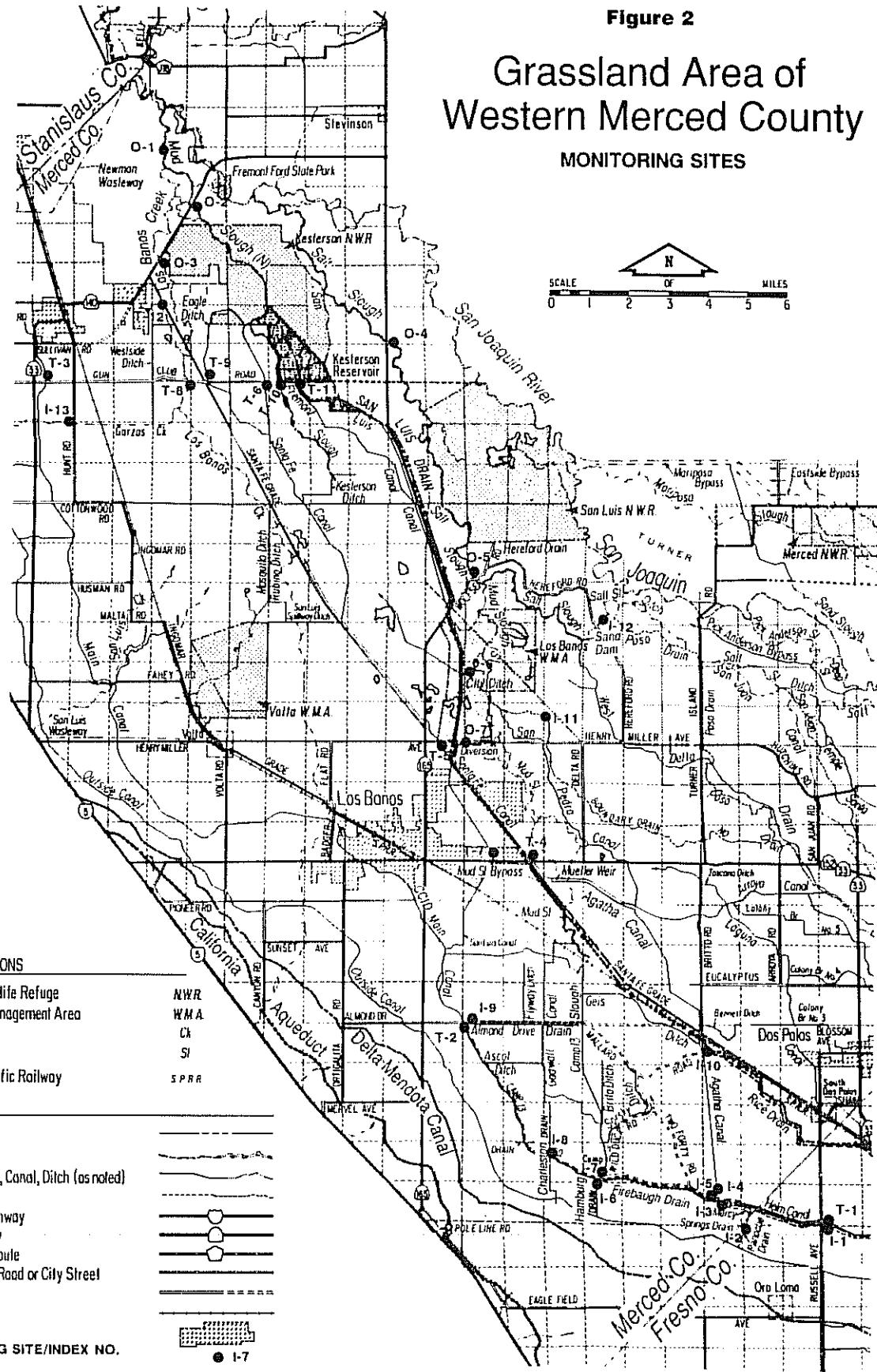


Figure 2

Grassland Area of Western Merced County MONITORING SITES



ABBREVIATIONS

National Wildlife Refuge
Waterfowl Management Area
Creek
Slough
Southern Pacific Railway

N.W.R.
W.M.A.
Ck
SI
S.P.R.R.

LEGEND

- County Line
- River
- Creek, Slough, Canal, Ditch (as noted)
- Drain
- Interstate Highway
- State Highway
- County Sign Route
- Major County Road or City Street
- Other Roads
- Railroad
- City, Town
- MONITORING SITE/INDEX NO.

● I-7

Figure 2

Grassland Area of Western Merced County

MONITORING SITES

